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Review & Perspective

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Kentucky Economic Review

by Merl M. Hackbart*

Following an unexpectedly high rate of growth in the real (inflation-adjusted) gross national product (GNP) in first quarter 1984 of 10.1 percent, and strong second quarter growth of 7.1 percent, the third quarter growth dropped to an annual rate of 2.7 percent, according to preliminary estimates. This hesitation in the rate of expansion of the U.S. economy was reflected by very little increase in residential sales and by a decrease in purchases of both durable and nondurable manufactured goods during the third quarter. Overall, real final sales were unchanged, despite substantial third quarter increases in business fixed investment and government purchases. Offsetting these increases, net exports declined sharply.

While such data might initially suggest that the strong recovery of the first and second quarters has rapidly disintegrated into a no-growth period, or possibly, a recession scenario, other economic and consumer survey data suggest that the third quarter represented a "transition" from a high and unsustainable growth path to a phase of slow but sustainable growth for the longer term. The key question facing analysts is whether the slower but sustainable growth phase of the national recovery might include one or two quarters of negative growth—a short recession—in 1985.

To clarify the current economic picture and to assess the short-term economic future, it is useful to review key economic variables for the second and third quarters that will have the greatest impact on the future growth path of the economy. Recent data for Kentucky and possible implications of national trends for Kentucky are also reviewed.

Consumer sales led the slowdown in the national economy during the third quarter. Total consumer spending has grown at a 1.8 percent annual rate since May, compared to a growth rate of 5.1 percent during the first six months of the year. The reduction in consumer expenditures translated into an increase in the savings rate, now approximately 6 percent, compared to 5.7 percent during the second quarter, 1984. Such a savings rate augers well for future consumption when complemented by data from the Survey of Consumer Attitudes (University of Michigan). The survey continues to indicate that consumers generally have a positive view about the future.

Supporting that analysis, automobile sales bounced back in September to an annual rate of 8.5 million units, after a slowdown in August to 7.7 million units (at an annual rate), that had resulted principally from suppiy bottlenecks. Consumer demand for larger and sportier cars in 1984 has not been matched by production adjustments. Indications are, however, that plant adjustments coming on board in September associated with the new 1985 models, should begin to rectify this problem later in the fourth quarter, leading to a better alignment of supply and demand conditions.

Overall, the consumer spending picture appears blurred and indicative of a transition period in the business cycle. Some analysts conclude that the general slowdown and/or decline in some consumption lines in third quarter consumer spending indicate a real turning point in the business cycle. Some factors normally associated with a downturn in the business cycle are in evidence. Among these are slower real personal income growth (growing at 3.2 percent in the third quarter, but down from 6.3 percent for the second quarter); higher debt burdens (the rate of increase in consumer debt outstanding for July and August was growing at 19.75 percent and 16.5 percent, respectively, but was down from 24 percent in the second quarter); and rising interest rates. The latter factor, while rising through most of the third quarter, turned down at the end of the quarter in response to Federal Reserve policy changes. The latest adjustments in policies of the Federal Reserve reverse the tighter money policies enacted in late March and April and have led to marginal downturns in federal funds and prime rates. The recent downward adjustments in interest rates provide a basis for a recovery from the precipitous drop in the August housing starts (down to a rate of 1.54 million units in August from a level of 1.76 million units in July). On balance, consumer savings positions and positive attitudes appear likely to offset the negative business cycle indicators.

(Continued on page 14)

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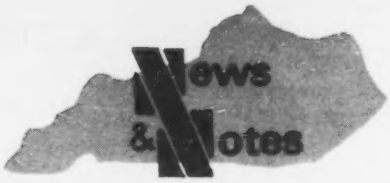

The Center for Business and Economic Research (CBER) is pleased to announce the addition of several new professionals to its staff. These appointments complement the reorganization of the research activity of the College of Business and Economics announced in the last two issues of this publication, and enhance CBER's capabilities in the areas of research, statistical information service, and publication—all three of CBER's program areas. Both Carolyn S. Looff, CBER's new Manager of Grants and Contracts and Senior Research Associate, and Carol M. Straus, CBER's new Senior Research Associate, are from Lexington and are University of Kentucky alumni. Dr. Patricia Y. Smith, CBER's new Senior Editorial Associate, is a native of Minnesota and holds the doctorate from the University of Minnesota.

Ms. Looff holds the MBA from the College of Business and Economics, University of Kentucky, and most recently was on the staff of the Kentucky Real Estate Research Center. Her primary responsibility within CBER will be to develop and manage all research grants and contracts for the College of Business and Economics; she will also participate in a variety of research projects, as needed. Currently Ms. Looff is preparing all data to be analyzed in this year's *Kentucky Economic Report*, due for release in early 1985.

Ms. Straus is currently a PhD candidate in Sociology (University of Kentucky), and holds the B.A. in Mathematics; she is also an experienced computer programmer and analyst, and has developed considerable expertise in the use of machine-readable products from the Bureau of the Census. Ms. Straus' role within the Center will be to apply her skills and specialization in demography, social change and development to the research projects of the Center, and to assist in the maintenance and development of the Kentucky Economic Information System.

Dr. Smith joins the staff of CBER to assume day-to-day responsibility for the publication of *Growth and Change: A Journal of Public, Urban, and Regional Policy*, including book review coordination and editing. She is also responsible for coordinating production of the *Working Paper Series* for the College of Business and Economics. Dr. Smith most recently was a member of the faculty of the Department of English, University of Kentucky.

* * *

During recent months, Margaret Adams, Manager of the Kentucky Economic Information System (KEIS), talked before two regional groups concerning the utility of the KEIS as a research resource. These were the annual fall meeting of COAL.I.N.K. (Coal Information Network of Kentucky), held at the State Library and Archives, Frankfort, and a monthly gathering of members of the Central/Eastern Kentucky On-Line Users Group, held at Morehead State University. KEIS training sessions took place in September at the Technical Support Branch office of the Kentucky Labor Cabinet and in October at the Business Department of the *Louisville Courier-Journal*. Persons from either the public or private sectors who wish further information concerning the KEIS should call the Manager, (606) 257-7675.

The database of the KEIS continues to be updated and revised as new and/or revised data are received from the primary source agencies. Within the state-level databanks, annual disaggregated personal income estimates have recently been revised by the Bureau of Economic Analysis (U.S.

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This publication provides current information concerning the Kentucky economy. It is a forum for the publication of short expository articles, analyses of some aspect of the Kentucky economy, forecasts of the Kentucky economy, and tables of selected data chosen as indicators of developments in the Kentucky and national economies. The publication also sometimes includes information about enhancements to the Kentucky Economic Information System (KEIS).

Articles submitted for publication should be sent to the Editor at the address given above. All submissions will be reviewed independently by persons recognized as knowledgeable in the specific subject discussed. However, the ultimate responsibility for content rests with the author.

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Forecasting the Real Estate Market in Kentucky

by G. S. Laumas*

This article reports the results of employing a statistical model to forecast real estate transactions in single-family homes for Kentucky for the period, 1984-90. The Kentucky Real Estate Commission funded this project through the efforts of the Kentucky Real Estate Education and Research Center of the College of Business and Economics, University of Kentucky; the project was undertaken during the Summer of 1984.

The first phase in forecasting the Kentucky real estate market was to identify those variables that influenced sales of single-family homes in Kentucky during the period 1975-83. The variables tested were the level of conventional mortgage rates (nationally); the change in these rates; the national inflation rate, as measured by the Consumer Price Index; Kentucky total and per capita personal income; Kentucky population growth; and the unemployment rate of Kentuckians.[1] The analysis of the historical data showed that the change in the level of the mortgage rate was the crucial variable determining real estate transactions for the period 1975-83. Mortgage rates were in turn strongly affected by the amount of national money stock, federal government borrowing, and the balance on current account of the U.S. Balance of Payments.

It had been anticipated that changes in real personal income levels and the unemployment rate would also be shown to affect sales of single-family homes. A possible reason why this was not supported by the data analysis is the fact that persons earning below a certain level of income, or those who are unemployed, are effectively excluded as potential homebuyers. This exclusion may be self-imposed by the buyers themselves, or by the financial institutions, or by the real estate brokers.

Before proceeding further in this discussion, some data definitions would be useful. This study dealt only with single-family homes and did not distinguish between owner-occupied and rental single-family housing, since no data are available to make that distinction. Ideally, only transactions involving the sale of owner-occupied homes should have been included in the study, since rental houses are similar to apartments or office buildings in terms of the motivation for owning real estate. The definition of housing used here excluded all multi-family housing as well as all non-residential real estate, such as office buildings, warehouses, factories, and shopping centers. A different model would be required to study multi-family and non-residential real estate and to deal with maximizing expected profits or rates of return from such real estate investment. All institutional housing (for example, military quarters, prisons, university dormitories, government buildings, and school buildings) was also excluded because it is not a part of the real estate market.

In the analysis, the average national 30-year conventional mortgage rate was used as the general mortgage rate indicator. Adjustable mortgage rates were not considered because:

a) data on these rates are very sketchy before 1978,
b) there is a wide variety of adjustable rate schemes, and
c) during the life of adjustable rate loans, practically all attempt eventually to approximate the rate offered by 30-year fixed mortgages.

Thus, to be both practical and consistent, only the average national 30-year conventional mortgage rate was analyzed.

The Forecasting Model

As indicated, the first step in forecasting the sales of single-family homes in Kentucky for the period 1984 to 1990 was to use the available data for the period 1975 to 1983 to determine the variables that significantly affected these transactions. This analysis provided evidence that the change in the level of mortgage rates explained about 80 percent of the variance of the sales of single-family homes; the inflation rate accounted for about 14 percent; the remaining 6 percent was attributed to random or unknown factors. On the basis of generally accepted economic studies, it is appropriate to consider that the random or unexplained part of the variance was relatively unimportant.

Stated in terms of an example, the statistical results of the analysis of the data from 1975 to 1983 showed that when the mortgage rate rose 1.0 percent (from 10 to 11 percent, for example), transactions involving single-family homes declined by about 4.0 percent. When the inflation rate increased by 1.0 percent, sales fell by about 0.5 percent. The inflation rate result needs to be explained further.

Expected inflation encourages people to buy homes. However, rising prices for single-family homes also exclude lower-income persons from the group of potential buyers, especially when house prices rise faster than incomes. The interaction of these two opposing forces causes home sales transactions to fall as the inflation rate rises. There is, of course, a third avenue through which the inflation rate exerts itself—by changing the expected mortgage rate.

If the expected inflation rate is close to zero, the level of the mortgage rate depends upon the "liquidity premium" or, what rate of return people expect to receive from depositing their savings with a financial institution. In addition to a liquidity premium, lenders also want to receive a "maturity premium," and this generally increases with the term of a loan. Taken together the "liquidity" and "maturity" premiums, during periods of zero-expected inflation, usually vary between 5 and 6 percent. If the expected inflation rate

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is 5 percent a year, for example, the expected mortgage rate would be approximately 10 or 11 percent. Thus, since the change in the expected inflation rate changes the level of the mortgage rate, forecasting mortgage rates also involves considering the expected inflation rate.

Based upon the data for the 1975-83 period, the changes in the mortgage rate were caused by the growth of the national money supply, the level of federal deficits, and balance on current account of the U.S. Balance of Payments. The roles played by the money supply and federal deficits in affecting interest rates are assumed to be generally understood. The effect of deficits on the current account of the Balance of Payments may not be as commonly known.

Deficits in the current account of the Balance of Payments are caused by imports and other current expenses of the U.S. abroad (incurred by foreign aid, the costs of maintaining military bases, U.S. embassies, and consular offices abroad, and expenditures by U.S. tourists abroad) that are at a higher level than the value of exports from the U.S. and foreign expenditures in the U.S. These deficits are normally financed by foreign purchases of various types of U.S. securities. Thus, as deficits on current account increase, they also lead to an increase in the demand for U.S. securities and this tends to lower U.S. interest rates. There has to be a positive interest rate differential between the U.S. and foreign countries to induce foreign purchase of U.S. securities. Higher U.S. interest rates may further induce foreigners to convert their domestic money holdings into U.S. dollars and securities. Thus, additional funds are supplied to U.S. financial markets, but at a somewhat higher interest rate level than what is available in foreign countries.

Current account of the Balance of Payments deficits have been rising steadily in recent years. These deficits may increase in future years, thereby providing additional funds to U.S. financial markets. However, foreign governments may take various steps to reduce this flow of funds to the U.S., because money balances leaving foreign financial markets put upward pressure on interest rates in their countries. Thus, these deficits may not provide a permanent pool of funds available to U.S. financial markets. For this reason, in each of the models constructed for this study, current account of the Balance of Payments deficits are assumed to be reducing through the 1980s.

Discussing the Forecasts

Based upon the analysis of the performance of the variables described above, the forecasting model was adapted to fit three different sets of assumptions. The intent was to propose three possible scenarios and then to forecast the inflation rate and the mortgage rate, and in turn, the volume of single-family transactions in Kentucky for the period, 1984-90, for each scenario. In each of these scenarios, Kentucky's population was assumed to grow at an annual rate of 1.0 percent, and new single-family housing construction was assumed to be as sensitive to interest rates and inflation as are sales of existing homes. The forecasts of single-family housing transactions produced by each model variant take new construction and growth into account.

In the first version, Model A, the variation-specific assumptions are that during the period of the forecast, 1984 to 1990, the growth rate of the money supply will be 6 percent per year; strong policy measures will be formulated before the end of 1984, which would start to reduce the federal deficit by the end of 1985; and current account of the Balance of Payments deficits will be slowly reduced over the remaining decade. By 1990, this model assumes that federal deficits would not exceed $40 billion and the current account of the Balance of Payments deficits would not exceed $10-20 billion. The resulting inflation rate would not exceed 6 percent in any of the forecast years; it would be about 3 percent in 1990.

The forecast from Model A is shown in Table 1. As outlined, Model A assumes that present government and Balance of Payments on current account deficits are reduced drastically by the end of 1985; this scenario requires activist government policies to maintain the current upswing in the national economy. Under these fairly optimistic, yet realistic conditions, mortgage rates would steadily decline after 1985 and housing sales in Kentucky would steadily increase. One could be highly confident that actual mortgage rates would be in the ranges given in Table 1 and that housing transactions would correspondingly improve.

TABLE 1

KENTUCKY HOUSING SALES FORECAST, 1984-1990, MODEL A

Year	Mortgage Rate (%)	Housing Sales (No. of Units)
1984	13.5 - 14.5	58,000
1985	11.5 - 14.8	62,500
1986	10.94 - 11.65	65,000
1987	10.4 - 11.1	67,000
1988	9.75 - 10.5	68,800
1989	10.0 - 10.6	72,400
1990	9.5 - 10.4	74,200

Assumptions underlying the forecasts in this table:
(a) growth rate of money supply is 6 percent per year,
(b) federal budget deficits are drastically reduced from 1985 to 1990, so that the deficit in 1990 does not exceed $40 billion,
(c) current account of the U.S. Balance of Payment deficits are reduced through the years, and do not exceed $10-20 billion in 1990,
(d) Kentucky population grows at the rate of 1 percent per year from 1984 to 1990.

In the second version of the forecasting model, Model B, it is assumed that during the period 1984-90, the growth of the money supply will be 8 percent per year. No consistent and systematic efforts would be made to reduce federal budget deficits, so they would average about $190-200 billion a year. Current account of the Balance of Payments deficits would be about $40-50 billion a year under this scenario. Statistical forecasts based on these assumptions indicate that the rate of inflation would rise to about 8 percent in 1985, and to about 10 or 11 percent in 1986; 1986-87 would be a recessionary period; the forecast for Model B is shown in Table 2.

The assumptions underlying Model B are clearly pessimistic. The downturn in economic activity that they suggest would depress sales of single-family houses, despite the decline in interest rates. Transactions are similar, throughout the forecast period, to the level of home sales in the 1981-82

period, if population growth and new construction activity during the 1984-90 period are ignored. The decline in the mortgage rate would be the result of a decline in the demand for funds.

TABLE 2

KENTUCKY HOUSING SALES FORECAST, 1984-90, MODEL B

Year	Mortgage Rate (%)	Housing Sales (No. of Units)
1984	13.5 - 15.2	54,000
1985	15.3 - 16.4	49,000
1986	15.5 - 16.9	42,000
1987	15.2 - 17.0	40,000
1988	14.5 - 16.5	38,000
1989	13.9 - 14.5	43,600
1990	12.5 - 13.5	46,300

Assumptions underlying the forecasts in this table:
(a) growth rate of money supply is 8 percent per year,
(b) federal budget deficits remain in the range of $190-200 billion in each of the years, 1984-90,
(c) current account of the U.S. Balance of Payment deficits are $40-50 billion in each of the years, 1985-90,
(d) Kentucky population grows at the rate of 1 percent per year from 1984 to 1990.

During any period, there is a fixed level of funds available in the financial markets. Government borrowing directly competes with business and household borrowing and if government borrowing increases, the effect is a raising of interest rates for all borrowers. In addition, long-term borrowers, for example, home buyers and businesses wishing to undertake new construction, or to replace old plants and equipment, are hurt further because during periods of inflation, the amount of funds made available by lenders for long-term borrowing usually declines. This occurs because lenders attempt to lend more of their funds for shorter periods of time, during which the inflation outlook is more certain. In other words, during periods of unanticipated inflation, lenders buy short-term securities rather than long-term bonds.

Model C is based upon a compromise set of conditions, derived from Model A. The fiscal assumptions are similar to those used for Model A, except that policymakers are assumed to take continued reasonable steps, rather than drastic ones, to control the federal budget deficit. The process of reducing the deficit would therefore take longer. The statistical result would be that annual average mortgage rates would steadily decline and sales of single-family homes would increase through 1990, though not at as high a rate as with Model A. Such a scenario is plausible, and probably more reasonable than either Model A or Model B, provided there are no major external shocks. The forecast from Model C is shown in Table 3. Housing sales in 1984 and 1985 would be somewhat higher than those in 1983. However, later years would experience an acceleration of single-family housing transactions.

Conclusion

This article has discussed a statistical forecasting model for predicting the sales of single-family housing in Kentucky for the period 1984-90, and has presented forecasts using this model under three different sets of assumptions. Model A represented the most optimistic scenario envisioned by the author; Model B was the most pessimistic scenario. The scenario envisioned for Model C seems to come closest to the author's sense of the manner in which policymakers are most likely to proceed, since the possibility that they would ignore the domestic economy seems remote. If these conditions prevail, there should be a gradual increase in the sales of single-family housing in Kentucky throughout the period, 1984-90. It should be pointed out again that this analysis used the 30-year conventional mortgage rate and that innovations in mortgage lending may have further positive impact on the sales of single-family homes, both nationally and in Kentucky.

TABLE 3

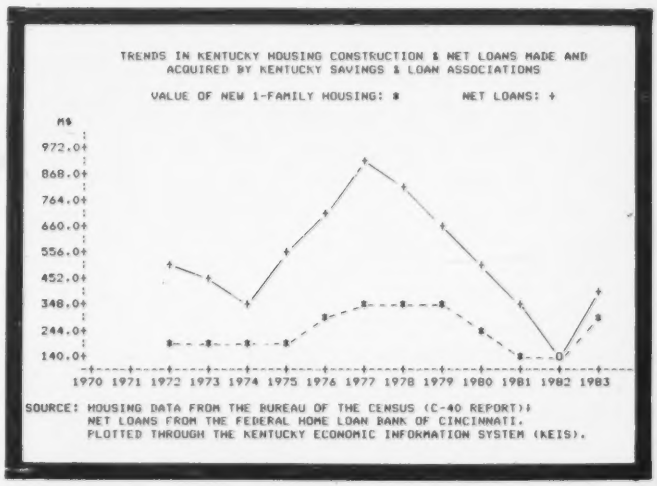
KENTUCKY HOUSING SALES FORECAST, 1984-90, MODEL C

Year	Mortgage Rate (%)	Housing Sales (No. of Units)
1984	13.75	55,800
1985	14.00	58,900
1986	13.00	62,500
1987	12.50	64,300
1988	11.75	65,200
1989	10.30	68,800
1990	10.50	69,700

Assumptions underlying the forecasts in this table:
Same as Table 1, except that policymakers may take longer (6-9 months more) to control budget deficits.

Note

[1]All historic data used in the analysis described in this article were drawn from the database of the Kentucky Economic Information System (KEIS).


TRENDS IN KENTUCKY HOUSING CONSTRUCTION & NET LOANS MADE AND ACQUIRED BY KENTUCKY SAVINGS & LOAN ASSOCIATIONS
VALUE OF NEW 1-FAMILY HOUSING: #
NET LOANS: +
M$
972.0
868.0
764.0
660.0
556.0
452.0
348.0
244.0
140.0
1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983
SOURCE: HOUSING DATA FROM THE BUREAU OF THE CENSUS (C-40 REPORT)+
NET LOANS FROM THE FEDERAL HOME LOAN BANK OF CINCINNATI.
PLOTTED THROUGH THE KENTUCKY ECONOMIC INFORMATION SYSTEM (KEIS).

Editor's Note: Each year for the past three years, the fall issue of this publication has included an article(s) analyzing the state's revenue situation. In keeping with this tradition, we present the following two articles. The first is based upon the author's August 22, 1984 testimony before the Interim Joint Committee on Appropriations and Revenue, Kentucky Legislative Research Commission, and includes the author's revised estimates for revenues for Fiscal Year 1985. The following article from the Kentucky Revenue Cabinet presents an overview of the structure of the Kentucky tax system that supports the Commonwealth's General Fund, and includes comparisons of some of the major revenue producers in Kentucky with comparable taxes in contiguous states. The article is based upon material prepared within the Cabinet for presentation to the Kentucky Economic Association (October 5, 1984) and to the October 23, 1984 meeting of the Interim Joint Committee on Appropriations and Revenue, Kentucky Legislative Research Commission.

Kentucky Revenues in 1983-84 and the Outlook for 1984-85

by Lawrence K. Lynch*

Overview

The U.S. economic recovery persists in its strength, despite repeated forecasts of a growth slowdown by leading economists. Real Gross National Product (GNP) grew at a 10.1 percent rate in the first quarter of calendar 1984 and at a 7.1 percent rate in the second quarter, while early in 1984, economists had predicted growth rates of around 4.0 to 4.5 percent. Kentucky's economy, too, grew more rapidly than expected in the first half of 1984, and tax receipts for fiscal year 1984 (FY84) exceeded the author's estimates for FY84, published a year ago in this quarterly. Mirroring the performance of the tax receipts, Kentucky's economy appears at last to be participating in the national economic recovery, even though employment levels in the state still remain well below their 1979 peaks.

Receipts vs. Estimates, 1983-84

The following analysis examines Kentucky's FY84 tax receipts, compares them to the author's estimates made in 1983, and then presents his estimates for fiscal year 1985 (FY85). Table 1 compares receipts for the fourth quarters of fiscal years 1983 and 1984 (FY83 and FY84), and also compares receipts for each of the full fiscal years.

Revenues for every major General Fund tax accelerated in the fourth fiscal quarter of FY84. For example, Sales and Use tax revenues grew by 9.7 percent in the fourth quarter, FY83 to FY84, compared to only 7.1 percent for the first three quarters, averaging to total annual growth of 7.7 percent over FY83. Individual Income tax receipts grew by 11.0 percent in the fourth quarter, compared to only 9.3 percent for the first three quarters. Growth for the Corporation Income tax was particularly strong in the fourth quarter—32.7 percent, compared to only 4.3 percent for the first three quarters—resulting in an annual growth rate of 15.2 percent. The total General Fund accelerated to a 12.8 percent growth rate in the fourth quarter, from just 5.9 percent for the first three quarters, averaging 7.1 percent for the full fiscal year.

In the Transportation Fund, there was a slight deceleration in tax receipts in the fourth quarter, with revenues from most taxes growing at faster rates for the full fiscal year than in the fourth quarter. Still, the Transportation Fund grew at a faster clip for the full year than did the General Fund (8.2 percent compared to 7.1 percent). This was due primarily to complete implementation of the new Weight-Distance tax that returned $27.7 million to the Transportation Fund, and to very strong growth in Motor Vehicle Usage tax receipts.

TABLE 1
KENTUCKY GENERAL FUND AND TRANSPORTATION FUND REVENUE
Fourth Fiscal Quarters and Full Fiscal Years, 1982-83 and 1983-84 (Millions of Dollars)

Revenue Source	April-June 1982-83	April-June 1983-84	Percent Change	Full Year 1982-83	Full Year 1983-84	Percent Change
Sales and Use Tax	$172.0	$188.6	9.7%	$ 700.2	$ 754.1	7.7%
Individual Income Tax	167.4	185.8	11.0	647.2	710.5	9.8
Corporation Income Tax	66.3	88.0	32.7	172.1	198.3	15.2
Coal Severance Tax	52.1	52.1	0.0	201.8	191.3	−5.0
Minerals and Gas Severance Tax	2.0	2.5	25.0	8.9	9.1	2.2
New Liquor Taxes	8.1	8.4	3.7	34.2	33.8	−1.2
Other General Fund	83.4	96.3	15.5	443.6	466.8	5.2
Total General Fund	$551.3	$621.7	12.8%	$2,208.0	$2,364.4	7.1 %
Motor Fuels Tax	$50.5	$51.3	1.6%	$196.6	$200.4	1.9%
Motor Vehicle Usage Tax	33.4	38.1	14.1	109.9	130.1	18.4
Weight-Distance Tax	8.4	7.1	−15.5	17.8	27.7	55.6
Other Transportation Fund	16.2	19.1	17.9	54.2	51.6	4.8
Total Tax Receipts, State Transportation Fund	$108.5	$115.6	6.5%	$378.5	$409.8	8.3%

Source: Kentucky Revenue Cabinet. Calculations by the author.

Lawrence K. Lynch is Associate Professor of Economics and Chairman, Division of Administration and Economics, Transylvania University, Lexington; and Consulting Economist for the Kentucky Legislative Research Commission.

TABLE 2
KENTUCKY RECEIPTS VS. LYNCH ESTIMATES, FISCAL YEAR 1983-84

Revenue Source	1983-84 Receipts	(Millions of Dollars) July '83 Estimate	Percent Error	Oct. '83 Estimate	Percent Error	Jan. '84 Estimate	Percent Error
Sales and Use Tax	$ 754.1	$ 735.0	−2.5%	$ 724.9	−3.9%	$ 743.0	−1.5%
Individual Income Tax	710.5	693.8	−2.4	700.9	−1.4	700.9	−1.4
Corporation Income Tax	198.3	183.5	−7.5	178.3	−10.0	186.4	−6.0
Coal Severance Tax	191.8	215.3	+12.3	212.8	+10.9	188.7	−1.6
Minerals and Gas Severance Tax	9.1	9.4	+3.3	9.3	+2.2	8.8	−3.3
New Liquor Taxes	33.8	35.9	+6.2	35.9	+6.2	35.9	+6.2
Other General Fund	466.8	457.2	−2.1	462.9	−0.8	462.9	−0.8
Total General Fund	$2,364.4	$2,330.1	−1.5%	$2,325.0	−1.7%	$2,326.6	−1.6%
Motor Fuels Tax	$200.4	$210.4	+5.0%	$210.4	+5.0%	$204.0	+1.8%
Motor Vehicle Usage Tax	130.1	117.0	−10.1	124.4	−4.4	128.0	−1.6
Weight-Distance Tax	27.7	18.7	−32.5	18.7	−32.5	26.8	−3.2
Other Transportation Fund	51.6	56.9	+10.3	56.9	+10.3	56.9	+10.3
Total Tax Receipts, State Transportation Fund	$409.8	$403.0	−1.7%	$410.4	+0.1%	$415.7	+1.4%

Source: Data on receipts are from the Kentucky Revenue Cabinet. The estimates and related calculations are the author's.

Table 2 compares FY84 receipts with three of the author's estimates: those made in July 1983 and published a year ago in *Review & Perspective*; the October 1983 revisions that resulted from a reestimate of the author's elasticity model; and the author's January 1984 revisions, made in order to forecast receipts for the 1984-86 biennium, as requested by the 1984 Kentucky General Assembly. As shown, the estimates of the total General Fund did not vary by much through the several revisions, so the percentage errors were all very similar and well within the acceptable estimating range of ± 2.5 percent. Generally speaking, the errors reflect a failure to anticipate the strength of the fourth quarter receipts.

For individual General Fund taxes, the most severe percentage errors were an underestimation of Corporation Income tax receipts, which are always difficult to estimate, and an overestimation of receipts from the new liquor taxes. In the case of the General Fund estimates, the estimating errors came to about $10 million each on the Sales and Use, Individual Income, and Corporation Income taxes. The dollar amount of the errors regarding the Transportation Fund estimates were much smaller. The author's estimates of total Transportation Fund tax receipts varied from an underestimate of 1.7 percent in July 1983, to an overestimate of 1.4 percent in January 1984.

It should be noted that for FY84, the Revenue Cabinet's General Fund estimates (also published here a year ago) were closer to the actual receipts than the author's. The Cabinet's October 1983 estimate of $2,355.8 million was just $8.6 million, or 0.4 percent below actual FY84 receipts of $2,364.4 million. The January 1984 Revenue Cabinet estimate of $2,342.9 million was a bit further off—$21.5 million or 0.9 percent—but still closer than the author's estimates.

Revised Revenue Estimate, Fiscal Year 1984-85 (FY85)

The acceleration in the growth of tax receipts from last April to June is not expected to reverse itself in the near future. The momentum of the U.S. economy, and of Kentucky's economic recovery, should lead to strong growth in Kentucky tax revenue during the current fiscal year. Tax receipts for the first fiscal quarter of FY85 support this assumption.

In its August 1984 national forecast, Data Resources, Inc. (DRI) expected a decline in the growth rate of real GNP over the balance of calendar year 1984 and into 1985; however, growth was expected to remain strong at least until the first quarter of 1985.[1] Since recovery in Kentucky has lagged the U.S. economy by at least two quarters, the assumption made here is that presuming the DRI forecast holds true, Kentucky's economic growth should remain strong throughout FY85.

The revenue estimates for FY85 presented in Table 3 revise, in an upward direction, the author's first FY85 estimates made in January 1984 and also shown in the table. The upward revision is the result of applying the revenue elasticity model[2] to a higher FY84 revenue base and of utilizing a higher rate of growth of Kentucky personal income (8.4 percent instead of 6.7 percent) than was possible earlier. These changes resulted in an increase in the estimates for most major taxes.

The revised total General Fund estimate for FY85 is $2,563.0 million, an 8.4 percent increase over FY84 General Fund receipts. Upward revisions were made in the August forecast, compared to the January forecast, in all of the major taxes except the Coal Severance and new liquor taxes. In the case of the Coal Severance tax, the elasticity model was abandoned due to uncertainties regarding the coal industry at the time the forecast was made, as well as a likelihood of flat or lower oil prices in the coming months. It was judged likely that receipts from the Coal Severance tax would be flat in FY85; it is still too early to know whether this assessment was overly pessimistic. Receipts from the Coal Severance tax for the first quarter of FY85 (third quarter of calendar 1984) ran almost 41 percent ahead of a year ago. Although this growth is unlikely to be sustained in the months ahead, receipts from the Coal Severance tax for the full FY85 may be at a higher level than suggested in the forecast.

(Continued on page 10)

selected indicators OF ECONOMIC A

These tables of selected indicators of economic activity were prepared by a special-purpose program of the Kentucky Economic Information System. The data in the tables are reported figures which were obtained from a variety of state and federal agencies, as well as from private firms.

UNITED STATES DATA

	April 1984	May 1984	June 1984	Qtr. II 1984	% Chg 84-I 84-II	% Chg. 83-II 84-II
CONSUMER PRICE INDEXES (1967=100, NOT SEASONALLY ADJUSTED)						
CONSUMER PRICE INDEX, ALL URBAN CONSUMERS, ALL ITEMS (NEW DEF)	308.80	309.70	310.70	309.73	1.10	4.32
CONSUMER PRICE INDEX, ALL URBAN CONSUMERS, FOOD AND BEVERAGES	294.50	293.60	294.30	294.13	0.26	3.29
CONSUMER PRICE INDEX, ALL URBAN CONSUMERS, HOUSING (INCL RENTAL EQUIV)	333.20	334.60	336.20	334.67	1.24	4.02
CONSUMER PRICE INDEX, ALL URBAN CONSUMERS, APPAREL AND UPKEEP	199.20	198.90	197.40	198.50	0.69	1.41
CONSUMER PRICE INDEX, ALL URBAN CONSUMERS, TRANSPORTATION	309.60	312.20	313.10	311.63	1.76	5.42
CONSUMER PRICE INDEX, ALL URBAN CONSUMERS, MEDICAL	375.70	376.80	378.00	376.83	1.19	6.33
CONSUMER PRICE INDEX, ALL URBAN CONSUMERS, ENTERTAINMENT	253.80	253.50	254.50	253.93	1.16	3.67
CONSUMER PRICE INDEX, ALL URBAN CONSUMERS, OTHER	302.80	303.20	304.40	303.47	0.70	6.94
CONSUMER PRICE INDEX, ALL URBAN CONSUMERS, SPECIAL INDEX: ENERGY	421.30	426.10	428.50	425.30	1.67	1.37
PRODUCER PRICE INDEXES (1967=100, NOT SEASONALLY ADJUSTED)						
PRODUCER PRICE INDEX, ALL COMMODITIES	311.30	311.50	311.40	311.40	0.68	3.28
PRODUCER PRICE INDEX, ALL FINISHED GOODS	291.20	291.10	291.20	291.17	0.23	2.49
PRODUCER PRICE INDEX, FINISHED CONSUMER GOODS	290.30	290.30	290.30	290.30	0.09	2.40
PRODUCER PRICE INDEX, INTERMEDIATE MATERIALS	320.30	320.90	321.60	320.93	0.96	3.56
PRODUCER PRICE INDEX, INTERMEDIATE MATERIALS FOR MANUFACTURING	302.90	303.30	303.10	303.10	0.98	3.88
PRODUCER PRICE INDEX, CRUDE MATERIALS	339.40	338.00	333.20	336.87	0.57	3.66
PRODUCER PRICE INDEX, CRUDE FOODSTUFFS AND FEEDSTUFFS	269.70	266.40	260.70	265.60	0.30	4.10
PRODUCER PRICE INDEX, BITUM. COAL, INDUSTRIAL, SPOT(1967=100)	444.30	449.60	449.10	447.67	-0.91	-0.10
PRODUCER PRICE INDEX, BITUM. COAL, INDUSTRIAL, CONTRACT(JUNE76=100)	152.10	153.30	152.10	152.50	0.02	1.49
PRODUCER PRICE INDEX, ALL CONSTRUCTION MATERIALS	306.80	306.00	306.30	306.37	0.57	3.10
CONSUMER PRICES: ENERGY (U.S. CITY AVERAGE)						
AVG PRICE FOR UTILITY (PIPED) GAS, PER 40 THERMS	27.17	27.64	27.57	27.46	1.51	0.96
AVG PRICE FOR UTILITY (PIPED) GAS, PER 100 THERMS	61.92	64.39	64.02	63.44	2.75	-0.70
AVG PRICE FOR ELECTRICITY, PER 500 KWH	39.49	39.54	41.63	40.22	3.58	6.07
AVG PRICE FOR FUEL OIL #2 (HOME HEATING OIL), PER GALLON	1.14	1.13	1.13	1.13	-2.91	4.68
AVG PRICE, GASOLINE, ALL TYPES, PER GALLON	1.21	1.22	1.21	1.22	1.64	-1.51
AVG PRICE, GASOLINE, LEADED REGULAR, PER GALLON	1.14	1.15	1.15	1.15	1.92	-1.68
AVG PRICE, GASOLINE, UNLEADED REGULAR, PER GALLON	1.23	1.24	1.23	1.23	1.57	-1.57
AVG PRICE, GASOLINE, LEADED PREMIUM, PER GALLON	1.38	1.38	1.38	1.38	0.98	-0.86
LABOR FORCE (SEASONALLY ADJUSTED, MILLIONS OF PERSONS)						
LABOR FORCE, TOTAL (INCL RES ARMED FORCES)	114.94	115.49	115.57	115.33	0.91	2.12
LABOR FORCE, CIVILIAN (EXCL RES ARMED FORCES)	113.24	113.80	113.88	113.64	0.92	2.13
EMPLOYMENT, RESIDENT ARMED FORCES	1.69	1.69	1.69	1.69	0.34	1.30
EMPLOYMENT, TOTAL CIVILIAN	104.40	105.29	105.75	105.15	1.35	5.11
EMPLOYMENT, AGRICULTURE	3.39	3.39	3.40	3.39	2.39	-0.59
EMPLOYMENT, NONAGRICULTURAL	101.01	101.90	102.34	101.75	1.32	5.31
UNEMPLOYED, CIVILIAN, TOTAL	8.84	8.51	8.13	8.50	-4.18	-24.41
UNEMPLOYMENT RATE, TOTAL LABOR FORCE	7.70	7.40	7.00	7.37	-5.05	-25.98
UNEMPLOYMENT RATE, CIVILIAN LABOR FORCE	7.81	7.48	7.14	7.48	-5.05	-25.99
OTHER SELECTED NATIONAL INDICATORS:						
U.S. GROSS NATIONAL PRODUCT (B $) (% CHG, ANNUAL RATE)	NA	NA	NA	3644.70	11.00	11.56
U.S. REAL GROSS NATIONAL PRODUCT (B 72$) (% CHG, ANNUAL RATE)	NA	NA	NA	1638.80	7.11	7.48
PERSONAL INCOME, TOTAL, SEASONALLY ADJUSTED (B $)(% CHG, ANNUAL RATE)	2968.50	2978.80	3006.50	2984.60	9.07	9.95
COMPOSITE INDEX OF 12 LEADING INDICATORS (1967=100)	168.20	168.60	166.70	167.83	1.00	8.47
INDEX OF INDUSTRIAL PRODUCTION, SEASONALLY ADJUSTED (1967=100)	162.10	162.80	164.40	163.10	2.09	12.90
AVERAGE PRIME RATE CHARGED BY BANKS ON SHORT-TERM BUSINESS LOANS	11.93	12.39	12.60	12.31	11.17	17.21
INTEREST RATE, YIELD ON 3-MONTH TREASURY BILLS	9.69	9.90	9.94	9.84	7.77	16.92
PRIVATE HOUSING UNITS AUTH. 16000 PERMIT-ISSUING PLACES (SADJ THOU)	1758.00	1745.00	1768.00	1757.00	-11.01	5.84
TOTAL INSTALLMENT CREDIT OUTSTANDING AT END OF MONTH (B $)	407.67	418.08	427.56	427.56	6.24	21.12

ACTIVITY

KENTUCKY DATA

	April 1984	May 1984	June 1984	Qtr. II 1984	% Chg. 84-I 84-II	% Chg. 83-II 84-II
LABOR FORCE (NOT SEASONALLY ADJUSTED, THOUSANDS)						
LABOR FORCE, TOTAL CIVILIAN	1735.90	1746.10	1770.80	1750.93	1.72	1.47
EMPLOYMENT, TOTAL, BY PLACE OF RESIDENCE	1570.70	1589.00	1613.10	1590.93	3.65	5.18
EMPLOYMENT, AGRICULTURAL	57.40	64.80	78.40	66.87	37.87	-2.29
EMPLOYMENT, TOTAL NON-AGRICULTURAL	1513.30	1524.20	1534.70	1524.07	2.53	5.54
UNEMPLOYMENT RATE	9.50	9.00	8.90	9.14	-15.57	-25.98
EMPLOYMENT, TOTAL NON-AGRICULTURAL WAGE AND SALARY	1175.90	1189.20	1199.50	1188.20	2.31	2.43
EMPLOYMENT, BITUMINOUS COAL & LIGNITE MINING (SIC 12)	36.20	37.00	37.20	36.80	3.08	2.22
EMPLOYMENT, CONTRACT CONSTRUCTION	48.20	54.20	57.60	53.33	16.11	16.70
EMPLOYMENT, TOTAL MANUFACTURING	252.40	253.90	256.50	254.27	1.65	5.56
EMPLOYMENT, MANUFACTURING, DURABLE	138.40	139.30	141.30	139.67	2.39	9.40
EMPLOYMENT, MANUFACTURING, NON-DURABLE	114.00	114.60	115.20	114.60	0.76	1.24
EMPLOYMENT, TRANSPORTATION, COMMUNICATIONS & PUBLIC UTILITIES	62.70	62.90	64.30	63.30	2.21	1.28
EMPLOYMENT, WHOLESALE & RETAIL TRADE	266.60	271.10	275.10	270.93	1.97	2.85
EMPLOYMENT, FINANCE, INSURANCE & REAL ESTATE (SIC 60-67)	52.90	53.50	53.90	53.43	0.69	0.19
EMPLOYMENT, SERVICES (SIC 70-80)	229.60	230.60	233.00	231.07	3.73	1.63
EMPLOYMENT, CIVILIAN GOVERNMENT	221.70	220.30	216.20	219.40	-0.74	-2.60
EMPLOYMENT, STATE & LOCAL GOVERNMENT	181.00	179.50	175.20	178.57	-1.14	-3.25
HOURS AND EARNINGS OF PRODUCTION WORKERS IN MANUFACTURING						
AVG WEEKLY HOURS, PROD WORKERS, TOTAL MANUFACTURING	39.10	38.90	39.40	39.13	0.09	0.34
AVG WEEKLY HOURS, PROD WORKERS, MANUFACTURING DURABLES	40.20	40.10	40.50	40.27	0.00	4.86
AVG WEEKLY HOURS, PROD WORKERS, NON-DURABLE MANUFACTURING	37.70	37.50	38.20	37.80	0.09	-4.87
AVG HOURLY EARN, PROD WORKERS, TOTAL MANUFACTURING	9.25	9.29	9.30	9.28	1.27	6.71
AVG HOURLY EARN, PROD WORKERS, MANUFACTURING DURABLES	9.94	9.98	9.99	9.97	1.25	6.21
AVG HOURLY EARN, PROD WORKERS, NON-DURABLE MANUFACTURING	8.37	8.41	8.42	8.40	1.12	6.64
AVG WEEKLY EARN, PROD WORKERS, TOTAL MANUFACTURING	361.68	361.38	366.42	363.16	1.36	7.07
AVG WEEKLY EARN, PROD WORKERS, MANUFACTURING DURABLES	399.59	400.20	404.60	401.46	1.25	11.38
AVG WEEKLY EARN, PROD WORKERS, NON-DURABLE MANUFACTURING	315.55	315.38	321.64	317.52	1.21	1.45
MINING (MILLIONS OF TONS, MILLIONS OF TAX DOLLARS)						
BITUMINOUS COAL & LIGNITE, PHYSICAL OUTPUT, EASTERN KY, TOTAL	10.36	11.15	10.72	32.23	12.69	42.73
BITUMINOUS COAL & LIGNITE, PHYSICAL OUTPUT, WESTERN KY, TOTAL	3.10	3.34	3.35	9.80	-12.12	13.14
AVG HOURLY EARN, PROD WORKERS, BITUMINOUS COAL & LIGNITE MINING	14.41	14.25	14.42	14.36	2.91	-1.55
AVG WEEKLY EARN, PROD WORKERS, BITUMINOUS COAL & LIGNITE MINING	492.82	491.63	519.12	501.19	-2.20	4.86
AVG WEEKLY HOURS, PROD WORKERS, BITUMINOUS COAL & LIGNITE MINING	34.20	34.50	36.00	34.90	-4.99	6.51
TAX RECEIPTS, COAL SEVERANCE, CONSOLIDATED, TOTAL	19.68	16.83	15.60	52.10	*	-0.12
HOUSING (MILLIONS OF $, NO. OF PRIVATE RESID. UNITS--NOT SEAS ADJ)						
VALUE OF CONSTRUCTION CONTRACTS, RESIDENTIAL & NON-RES	168.50	239.50	193.90	601.90	47.85	-2.24
HOUSING UNITS, PRIVATE STRUCTURES, PERMIT AUTHORIZED, 1 UNIT	473.00	502.00	711.00	1686.00	21.82	-2.49
VALUATION, HOUSING UNITS, PRIVATE STRUCTURES, PERMIT AUTH, 1 UNIT	26.78	39.63	36.24	102.65	44.97	20.39
HOUSING UNITS, PRIVATE STRUCTURES, PERMIT AUTHORIZED, TOTAL	838.00	938.00	1334.00	3110.00	1.80	18.75
VALUATION, HOUSING UNITS, PRIVATE STRUCTURES, PERMIT AUTH, TOTAL	34.52	54.56	53.74	142.83	35.79	34.03
NET LOANS MADE & ACQUIRED BY KY. SAVINGS & LOAN ASSOCIATIONS	156.80	134.47	39.04	330.31	148.77	453.70
RETAIL SALES (MIL $, 000 CARS)						
TAX RECEIPTS, GENERAL FUND, SALES AND GROSS RECEIPTS	65.43	80.08	75.01	220.51	*	7.88
NEW PASSENGER CAR REGISTRATIONS, TOTAL, NOT SEAS. ADJ.	10.26	10.76	11.00	32.02	*	18.29
SELECTED STATE GOVERNMENT RECEIPTS (MIL $)						
TAX AND NONTAX RECEIPTS, GENERAL FUND, TOTAL	231.62	170.93	219.19	621.74	*	10.59
TAX RECEIPTS, GENERAL FUND, SALES & USE TAXES, TOTAL	59.11	64.02	65.48	188.61	*	9.63
TAX RECEIPTS, GENERAL FUND, INCOME TAX, INDIVIDUAL	87.69	49.59	48.56	185.85	*	11.06
TAX RECEIPTS, GENERAL FUND, INCOME TAX, CORPORATION	26.21	4.25	57.52	87.98	*	32.59
TAX RECEIPTS, STATE ROAD FUND, STATE SHARE	38.27	40.83	36.47	115.57	*	18.43
TAX RECEIPTS, STATE ROAD FUND, MOTOR FUELS TAXES, NORMAL	15.49	16.90	17.13	49.52	*	1.69
TAX RECEIPTS, STATE ROAD FUND, MOTOR VEHICLE USAGE TAX	11.65	12.24	14.21	38.10	*	14.00

PRIVATE SOURCES FOR THE ABOVE DATA INCLUDE:
F. W. DODGE DIVISION (MCGRAW-HILL INFORMATION SYSTEMS COMPANY), VALUE OF CONSTRUCTION CONTRACTS;
R. L. POLK & COMPANY, NEW CAR REGISTRATIONS (NA FOR OCT. '83)

NOTE: THE DATA ON PERMIT-AUTHORIZED CONSTRUCTION COME FROM THE BUREAU OF THE CENSUS, U.S. DEPARTMENT OF COMMERCE AND REPRESENT THE KENTUCKY PORTION OF THE NATIONAL SURVEY OF 16,000 PERMIT-ISSUING PLACES.

* = QUARTER TO QUARTER COMPARISONS NOT MEANINGFUL DUE TO SEASONAL VARIATION

(Continued from page 7)

TABLE 3
LYNCH REVISED ESTIMATES OF FISCAL YEAR 1984-85 REVENUES
(Millions of Dollars)

Revenue Source	Receipts 1983-84	Fiscal Year 1984-85 Jan. '84 Estimate	Fiscal Year 1984-85 Aug. '84 Estimate	Percent Change in Estimates	Percent Change FY84 to Revised Estimate for FY85
Sales and Use Tax	$ 754.1	$ 791.7	$ 815.7	+3.0%	8.2%
Individual Income Tax	710.5	763.8	790.4	+3.5	11.2
Corporation Income Tax	198.3	204.8	217.6	+6.3	9.7
Coal Severance Tax	191.8	204.7	191.8	−6.3	0.0
Minerals and Gas Severance Tax	9.1	9.4	9.9	+5.3	8.8
New Liquor Taxes	33.8	38.3	36.6	−4.4	8.3
Other General Fund	466.8	490.0	501.0	+2.2	7.3
Total General Fund	$2,364.4	$2,502.7	$2,563.0	+2.4%	8.4%
Motor Fuels Tax	$200.4	$214.8	$210.0	−2.2%	4.8%
Motor Vehicle Usage Tax	130.1	141.1	146.8	+4.0	12.8
Weight-Distance Tax	27.7	28.6	30.0	+4.9	8.3
Other Transportation Fund	51.6	59.7	54.2	−9.2	5.0
Total Tax Receipts, State Transportation Fund	$409.8	$444.2	$441.0	−0.7%	7.6%

Source: Same as Table 2.

The revision in the estimates for the Transportation Fund for FY85 were in a downward direction, totalling $3.2 million. Oil prices are expected to be weak and this should cause Motor Fuels tax receipts to be lower than previously anticipated. However, this weakness should be more than offset by upward revisions in the Motor Vehicle Usage tax (i.e., new and used car and truck sales tax) and Weight-Distance tax receipts. Receipts from other Transportation Fund taxes were also revised downward.

Conclusion

Although Kentucky's revenue prospects for FY85 have brightened, the potential for a sharp decline in the rate of revenue growth in FY86 has increased. DRI expects a "growth recession" to begin nationally in mid-1985, with real GNP growing at an annual rate of 1.0 percent or less, and with unemployment rising.[3] If this scenario materializes, Kentucky's economy may begin to falter in late 1985, perhaps before recovering to the employment levels of the late 1970s. If so, there would be negative consequences for revenue growth as well. Nonetheless, for the present, the author's January 1984 estimate of $2,685.1 million for General Fund receipts for FY86, a 4.8 percent growth over the revised FY85 estimate, still appears realistic.

Notes

[1]Data Resources, Inc., *U.S. Forecast Summary*, August 1984, Table 10, p. 8.
[2]The author's revenue elasticity model was first described here in Vol. 4, No. 2, June 1980, pp. 10-11.
[3]Data Resources, pp. 3 and 8.

KENTUCKY ECONOMIC INFORMATION SYSTEM
STANDARDIZED TABLE 116-A
KENTUCKY ANNUAL ECONOMIC DATABANK
COMMONWEALTH OF KENTUCKY MAJOR SOURCES OF REVENUE - FISCAL YEAR

SERIES			1980	1981	1982	1983	1984
872	TAX AND NONTAX RECEIPTS, GENERAL FUND, TOTAL	(FY)	1782.04	1894.86	2098.53	2208.01	2364.40
873	TAX RECEIPTS, GENERAL FUND, TOTAL	(FY)	1719.12	1825.92	2021.98	2133.58	2288.44
874	TAX RECEIPTS, GENERAL FUND, SALES AND GROSS RECEIPTS	(FY)	688.52	712.80	767.10	818.95	867.42
882	TAX RECEIPTS, GENERAL FUND, SALES & USE TAXES, TOTAL	(FY)	607.29	630.19	682.18	700.21	754.25
884	TAX RECEIPTS, GENERAL FUND, LICENSE AND PRIVILEGE TAXES	(FY)	162.67	173.00	257.14	249.79	237.68
887	TAX RECEIPTS, GENERAL FUND, COAL SEVERANCE TAX	(FY)	143.72	136.48	216.13	201.81	191.84
897	TAX RECEIPTS, GENERAL FUND, INCOME TAX, TOTAL	(FY)	664.68	727.88	767.64	819.29	908.73
898	TAX RECEIPTS, GENERAL FUND, INCOME TAX, CORPORATION	(FY)	158.85	154.79	166.81	172.12	198.26
899	TAX RECEIPTS, GENERAL FUND, INCOME TAX, INDIVIDUAL	(FY)	505.83	573.09	600.82	647.17	710.47
900	TAX RECEIPTS, GENERAL FUND, PROPERTY TAXES, TOTAL	(FY)	176.76	180.11	196.17	203.34	229.62
916	NONTAX RECEIPTS, GENERAL FUND, TOTAL	(FY)	62.91	68.95	76.55	74.44	73.96
921	TAX & NONTAX RECEIPTS, STATE ROAD FUND, TOTAL	(FY)	626.26	623.93	604.27	614.74	663.57
924	TAX RECEIPTS, STATE ROAD FUND, TOTAL	(FY)	371.31	368.47	386.58	390.84	422.47
922	TAX RECEIPTS, STATE ROAD FUND, STATE SHARE	(FY)	362.77	360.26	378.04	378.48	409.81
925	TAX RECEIPTS, STATE ROAD FUND, SALES AND GROSS RECEIPTS	(FY)	284.88	272.52	305.74	307.09	330.99
927	TAX RECEIPTS, STATE ROAD FUND, MOTOR FUELS TAXES, NORMAL	(FY)	NA	172.61	193.43	189.88	192.39
930	TAX RECEIPTS, STATE ROAD FUND, MOTOR VEHICLE USAGE TAX	(FY)	97.11	91.33	103.05	109.94	130.07
937	NONTAX RECEIPTS, STATE ROAD FUND, TOTAL	(FY)	263.49	263.68	226.23	236.26	250.47
938	NONTAX RECEIPTS, STATE ROAD FUND, FEDERAL GRANTS	(FY)	202.78	210.34	164.44	180.06	200.09

UNITS: MILLIONS OF DOLLARS

SOURCE: KENTUCKY DEPARTMENT OF REVENUE

THE CURRENT REVENUE SITUATION IN KENTUCKY

by Gary W. Gillis and James A. Street*

In January 1984, the Revenue Cabinet estimated that revenues for Kentucky's General Fund would increase in Fiscal Year 1985 (FY85) to $2490.64 million. This estimate represented 6.3 percent growth over the anticipated revenues for Fiscal Year 1984 (FY84). However, FY84 General Revenue receipts came in at a slightly higher level than had been anticipated last January, so that estimate represents an increase of only 5.3 percent. In other words, the FY85 revenue estimate currently in force is about 1.0 percent understated. This is well within the range that was allowed in preparing current revenue estimates, and in fact, is still within a range where the balance could be reversed by adverse economic conditions. The 12.3 percent growth of the General Fund for the first quarter of FY85, while quite positive, does not warrant a revision of the current revenue estimate for the fiscal year at this time. Overall, the first quarter of FY84 was extremely flat and comparison of these first quarters does not necessarily reflect trends that can be expected to continue throughout the fiscal year.

Notwithstanding the above, perhaps the most important subject facing Kentucky state government at the present time is the structure of its revenue system. The following article provides a general review of the revenue system and is intended to present information about those aspects of the system that seem most related to the current condition of the General Fund.

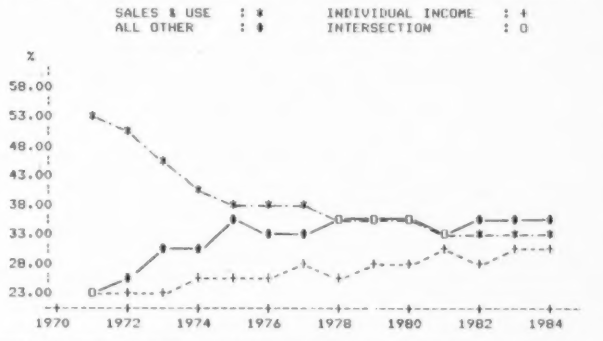
Growth and Stability in the General Fund

Over the past decade and a half, the General Fund has grown by an average of about 11.5 percent per year. However, this average is made up of two distinctly different periods. The decade of the 1970s saw the General Fund grow by about 14 percent per year; during the 1980s the growth rate has declined to about 7 percent per year. In other words, on a comparative basis, the recent growth record is poor. Most state General Funds had a recovery year in FY84 and grew in double-digit figures. For example, Tennessee grew by 11 percent, Virginia by 15 percent, and West Virginia by 14 percent. To the north, Indiana grew by 11.5 percent.

A primary reason for the decline in the rate of growth in the General Fund is not only the slowing in the rate of inflation in the most recent period—this after all has affected all states. Rather, the cause seems to lie in the changes in the Kentucky tax structure that have been made over the last several years.[1] Figure 1 plots the trends in the major taxes of the General Fund for the fiscal years since FY71. It shows the relative contribution of each of the major taxes to this fund. Note that the contribution of the Sales and Use tax, the major tax feeding this fund, has gradually fallen since the early 1970s, while the contribution of the Individual Income and all other taxes has increased, relatively.

FIGURE 1

TRENDS IN SELECTED TAXES AS A % OF TOTAL GENERAL FUND TAX RECEIPTS



SOURCE: KENTUCKY REVENUE CABINET, PLOTTED BY THE KENTUCKY ECONOMIC INFORMATION SYSTEM (KEIS).

Despite its declining relative contribution, the Sales and Use tax remains the most important source of revenue for the General Fund. During the early 1970s, receipts from this source grew between 10 and 15 percent per year; in FY84 they grew by 7.7 percent, but by only 2.6 percent in FY83. The change in the performance of this tax is directly related to exemptions to the sales tax base that have been made by almost every session of the Kentucky General Assembly in the past decade. While there have also been adjustments in some of the less important taxes (from the point of view of their overall contribution to the General Fund), and some additional taxes have been enacted—most notably Coal Severance, and Minerals and Gas Severance taxes, the overall effect of the changes of the last decade seems to have been to curtail the growth of the General Fund.

At the same time that the growth in the revenue base has been sharply reduced, there are still proposals for further reductions. Several different proposals were made during the last General Assembly to reduce or eliminate features of the Inheritance tax. Legislation is currently being proposed that would eliminate specific business inventory taxes. During the current fiscal year, General Fund receipts from the Inheritance tax are estimated at $46 million; receipts from the Merchants' Inventories and Manufacturers' Finished Goods Tax are

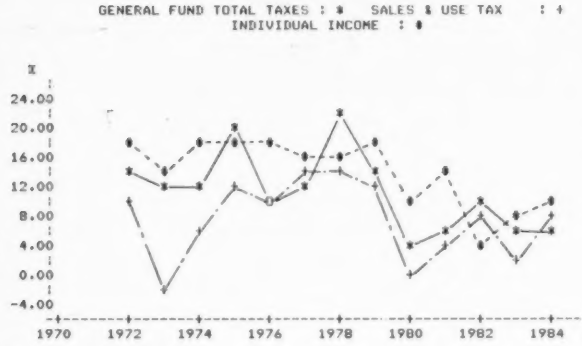
*Gary W. Gillis is Secretary of the Kentucky Revenue Cabinet; James A. Street is the Executive Director of the Office of Revenue Estimating and Economic Analysis, Kentucky Revenue Cabinet.

estimated at about $15 million. Elimination of these revenues would reduce the expected growth of the General Fund by almost 50 percent. It is clear that the General Fund cannot absorb further reductions to its tax base and still provide a growth margin that is much above the expected rate of inflation. In order to maintain even this level of growth in the General Fund, a one-for-one replacement of any exemptions to the total tax base would be required.

The stability of the General Fund is related to its growth pattern, and this has ranged from a low of 4.9 percent in FY80 to a high of 22.1 percent in FY78—a difference of 17.2 percentage points. On the other hand, the most rapidly growing tax—the Coal Severance tax—ranged from a decline of 15.2 percent in FY83 to annual growth of 23.6 percent in FY77, a difference of 38.8 percentage points. Throughout the recent decade or so, the most stable tax sources have been the Sales and Use tax and the Individual Income tax. The growth rates of these taxes, as well as all taxes of the General Fund as a whole, are plotted in Figure 2.

FIGURE 2

PERCENTAGE CHANGE IN SELECTED TAXES
FISCAL YEARS 1972-84



SOURCE: SAME AS FIGURE 1.

Tax Equity

Tax equity is one of the most complicated of issues. Little data on payments by income classes are available, except for data on the Individual Income tax. The Kentucky Income tax is generally progressive for taxpayers up to the $25-50 thousand gross income bracket, but becomes generally regressive beyond that. In other words, Kentuckians with gross incomes over $50 thousand generally pay proportionally less of their income in the form of individual income taxes compared to those with less than $50 thousand, who generally pay proportionally more.

While the progressivity-regressivity of the Individual Income tax can be computed, similar data for the other Kentucky taxes are less readily available. Some assumptions can be made based upon the knowledge of how the other taxes are structured, however. For example, sales taxes are generally considered regressive taxes, but in Kentucky the exemptions of food, prescription drugs, and home utilities lessen the regressive nature of the Sales and Use tax. The total or composite effect of all the Kentucky taxes is not known; some studies have been made about who pays the tax.[2] In the case of business taxes, these assumptions are distorted by the backward and forward shifting of cost by each business entity. Businesses pass the burden on to consumers, employees, or stockholders.

Comparisons made by the Advisory Commission on Intergovernmental Relations (ACIR) indicate that overall, Kentucky has a relatively low tax revenue potential. Because state economies are different, it would be inappropriate to compare total tax revenues between states. Rather, the ACIR regularizes tax revenues by calculating receipts from the separate taxes as a percentage of state personal income, and uses the results to compare state tax revenue potential. With this type of analysis, the revenue sources that are used proportionally less in Kentucky than in the fifty states, on average, are the property and sales taxes, user charges, and miscellaneous fees. In addition, Kentucky individual income taxes are found to be utilized to a greater extent than in the average of the fifty states, with the result that the Kentucky tax burden is shown to fall primarily on individuals.[3]

Table 1 compares general sales taxes, state and local income taxes, and state and local property taxes for Kentucky with those taxes in contiguous states in order to further illustrate this point. It should be noted that revenues from the cigarette sales tax are not included with the general sales tax in this table. All states contiguous to Kentucky, with the exception of Virginia, impose a cigarette sales tax that is significantly higher (from 10.5 cents per package in Indiana to 17 cents per package in West Virginia) than the 3 cents per package in Kentucky (and the 2.5 cents per package in Virginia).

TABLE 1
COMPARISON OF TAXES: KENTUCKY AND CONTIGUOUS STATES
1982 Selected Tax Revenues as Percents of Personal Income (% of PI)

States	Sales Tax Rate	Sales Tax % of PI	State & Local Income % of PI	State & Local Property % of PI
Illinois	5%	2.4%	2.2%	3.7%
Indiana	5	2.8	1.7	3.2
KENTUCKY	5	2.2	3.1	1.8
Ohio	5	1.8	2.5	3.2
Missouri	4.25	2.4	2.1	2.3
Tennessee	5.5	3.7	0.6	2.3
Virginia	3	1.6	2.9	2.8
West Virginia	5	4.8	2.1	1.9
U.S. Average		2.5	2.7	3.4

SOURCE: Advisory Commission on Intergovernmental Relations, *Significant Features of Fiscal Federalism*, 1982-83 Edition, Washington, D.C., 1984.

It is recognized that a major issue in discussing tax burdens is identification of the actual absorption of a tax as opposed to collection of the tax. This basically involves determining how the burden of a tax is transmitted from its point of collection to its point of actual payment. Forward tax shifting occurs when sellers raise product prices to cover the tax, thus shifting the burden of paying this tax to consumers in the form of higher prices. Backward tax shifting occurs when sellers are unable to increase product prices to cover the tax and so shift the cost or burden of the tax by paying lower wages to their employees or lower dividends to their stockholders, or by charging higher interest and rents.

In the case of individual income taxes, most people agree that the burden of the tax remains on the income recipient.

Most people believe also that consumers bear the burden of the sales and use tax. Actual absorption of taxes imposed upon businesses is uncertain; it is, however, possible to identify taxes initially paid by businesses and thus make interstate comparisons. Table 2 presents state-level business tax comparisons calculated by the ACIR; included are the corporation income tax; local property taxes on business property; sales tax on business purchases; taxes on insurance companies, on public utilities, and banks; severance taxes; and various occupation and business license taxes. In other words, these comparisons include all taxes initially paid by business, except unemployment compensation taxes, regardless of whether the tax was passed on to others.

TABLE 2
COMPARISON OF STATE AND LOCAL TAXES ON BUSINESS

	Taxes on Businesses as Percent of Total Taxes				Percent Change		
State	1957	1967	1977	1980	1957-67	1967-77	1977-80
Illinois	33.9%	29.6%	32.0%	33.9%	−12.7%	+8.1%	+5.9%
Indiana	37.2	29.5	29.6	32.8	−20.7	+0.3	+10.8
KENTUCKY	29.1	24.3	28.7	28.8	−16.5	+18.1	+0.3
Ohio	34.8	36.2	32.9	32.7	+4.0	−9.1	−0.6
Missouri	32.3	28.1	31.2	29.9	−13.0	+11.0	−4.2
Tennessee	31.1	31.1	34.9	34.1	0.0	+12.2	−2.3
Virginia	37.3	29.1	28.4	27.7	−22.0	−2.4	−2.5
West Virginia	44.3	39.1	45.4	46.6	−11.7	+16.1	+2.6
U.S. average	36.8	32.6	30.6	31.4	−11.4	−6.1	+2.6

SOURCE: Same as Table 1.

As can be seen, taxes initially paid by Kentucky businesses are low by comparison to the average for all states and are lower in Kentucky than in any contiguous state except Virginia. Generally, business taxes have declined as a percentage of total state and local taxes since 1957. In Kentucky the somewhat greater increase between 1967 and 1977 can be attributed to the enactment of the Coal Severance tax in 1972. The overall decline was reversed in the 1977-80 period with a slight increase in the U.S. average for all states. The Kentucky share remained constant during the period, and neighboring states were about evenly divided between those lowering and those increasing shares. Comparative data are not available for more recent years.

Tax Administration

Forty-three separate taxes support the General Fund and so administration of the Kentucky General Fund is complicated. In addition to the large number of taxes, administration is further complicated by exemptions, credits, new products, and innovations that were not originally included in the laws creating the taxes. The Individual and Corporation Income taxes are by far the most difficult to administer considering the significant time spent in form development, form distribution, tax collection, and audits. Administration of the Sales and Use tax is complicated by the number of items that are taxed (or not taxed). New issues continually need to be addressed, such as sales tax on computer software.

Conclusion

This brief article outlines the structure of the tax system supporting the Kentucky General Fund. It points out significant strengths and weaknesses of this structure, and analyzes effects of recent changes in taxation laws. It does not address the adequacy of the revenues raised as related to the program needs of the Commonwealth.

Notes

[1]A detailed list of all changes in General Fund taxes enacted since the 1974 Kentucky General Assembly can be found in Gary W. Gillis, "Kentucky's Revenue System: A Description and Comparison with Neighboring States," an unpublished presentation to the Kentucky Economic Association, October 5, 1984. A summary of the changes of the 1970s decade was included in Don M. Soule, "Another Look at Equity vs Adequacy in Kentucky Taxation," *Kentucky Economy: Review & Perspective*, Vol. 7, No. 3, September 1983, pp. 3-5.

[2]See for example, Stephen E. Lile, "Tax Options for Kentucky State Government," *KCEA Policy Paper No. 11* (Lexington, Ky.: Center for Applied Economic Research), October, 1981.

[3]Advisory Commission on Intergovernmental Relations, *Significant Features of Fiscal Federalism*, 1982-83 Edition, Washington, D.C., 1984.

PER CAPITA PERSONAL INCOME:
Kentucky and Contiguous States

	1982	1983	Percent Change 1982-83	1983 Rank in U.S.
U.S. Average	$11,113	$11,685	5.1%	—
Illinois	12,027	12,405	3.1	11
Indiana	10,019	10,476	4.6	33
KENTUCKY	9,122	9,397	3.0	44
Ohio	10,659	11,216	5.2	26
Missouri	10,403	10,969	5.4	28
Tennessee	9,029	9,549	5.8	43
Virginia	11,353	12,116	6.7	14
West Virginia	8,966	9,159	2.2	47

SOURCE: U.S. Department of Commerce, *NEWS*, BEA 84-44, August 28, 1984. Per capita personal income estimates are in current dollars.

(Continued from page 1)

The national civilian unemployment rate for the second and third quarters of 1984 seems to have settled at 7.4 to 7.5 percent. The Consumer Price Index (CPI) has increased slightly in recent months but there also are positive signs of price stabilization. Among these are probable decreases in worldwide petroleum prices and the noninflationary nature of recent wage settlements. For example, preliminary assessments of the recent United Auto Workers labor contract settlement indicate that labor costs for General Motors will increase approximately 20 percent over the next three years. Assuming a projected inflation adjustment of 15 percent (5 percent per year for the period), the settlement indicates a real cost increase of 5 percent. This should not add inflationary pressure, especially since the industry anticipates productivity gains of 10 percent over the same period.

Looking to the future, the consensus opinion among economic analysts and forecasters seems to be that the U.S. economy will follow this third quarter "transition" period with slow but positive growth continuing into 1985. Real GNP growth rates are predicted in the 3 to 4 percent range for the next two quarters, with the next critical period being the second and third quarters of 1985. The concern about 1985 arises for two reasons: continuing "soft" consumer demand after "pent-up" demands for consumer durables begin to be met in the next two quarters; and, increasing interest rate pressure resulting from strong federal borrowing of $55 to $60 billion in the fourth quarter and again in the first quarter of 1985, increased corporate bond sales, and continued growth in auto loans in the near term. This combination of factors could lead to upward interest rate adjustments and put additional pressure on the struggling housing and consumer durables sectors. If such interest rate pressure develops, very slow or negative growth may be indicated for mid-year in 1985. A stable inflation rate of approximately 4 percent should accompany this slow growth period, while the unemployment rate is expected to stabilize at about 7.1 to 7.2 percent for the next few quarters.

For Kentucky, the most positive indicators seem to be in revenue receipts. Individual income tax receipts increased by almost 13 percent in the first fiscal quarter of 1985 (the third calendar quarter, 1984) compared to the same period a year earlier; corporate income tax receipts were up 10.3 percent in the same period. Sales tax receipts also indicated a strengthening economy with an increase of 12.2 percent compared to last year. Data for Kentucky personal income cannot be estimated as rapidly as tax receipts are counted, so the picture for current total income is less clear. However, the Bureau of Economic Analysis, U.S. Department of Commerce, estimates that Kentucky total personal income grew 11.3 percent from the second quarter of 1983 to the second quarter of 1984.

On the basis of work-place reported employment data, the Kentucky situation has been gradually improving; manufacturing, trade, and services have all had employment increases in recent months. Compared to 1983 employment levels, the construction industry also seems healthier. However, using seasonally adjusted data, the unemployment rate, a residence-based estimate, seems to have increased during the third quarter of 1984 to an average of 9.6 percent, after having declined in the second quarter to 9.2 percent. These data are subject to revision and a better picture of current employment trends will probably not be available for several more months.

In summary, the U.S. economy began a "transition" period in the third quarter, 1984. The rapid growth rate of the first two quarters was replaced by slow but positive growth trends. A drop off in consumer spending led the change and slight inventory accumulations and production cutbacks followed the consumption adjustment. The Fed reacted quickly during the latter period of the third quarter to offset the softening of the economy. By doing so, they reversed their March and April policy of tightening the money supply by relaxing the monetary constraints to mitigate against a third quarter downturn. For the future, the recent marginal change in Fed policy will probably be frustrated as the credit markets will again be called upon to accommodate the huge federal deficits, caused by the federal treasury's attempts to borrow $55 to $60 billion in each of the next two quarters. Such credit demand pressures will probably reverse the recent downward interest rate trends in early 1985 and put further pressure on a slow growth economy—both in Kentucky and nationwide.

The wildcard in the 1985 scenario will undoubtedly be the actions taken by the Congress when it convenes in January. If the Administration and the Congress take steps to deal with the deficit, the Fed may be in a position to facilitate a stronger growth scenario for mid-1985. If they take no action, the interest rate levels indicated in this review may be optimistic.

SELECTED SEASONALLY ADJUSTED KENTUCKY EMPLOYMENT DATA

	198309	198310	198311	198312	198401	198402	198403	198404	198405	198406	198407	198408
RESIDENT EMPLOYMENT	1503.245	1506.216	1514.129	1520.156	1577.083	1580.516	1580.947	1575.526	1575.970	1578.066	1594.094	1573.107
UNEMPLOYMENT RATE	11.150	10.709	10.176	9.815	10.068	9.868	9.558	9.252	9.221	9.059	9.826	9.365
AGRICULTURE	66.467	66.340	66.213	66.028	65.835	65.683	65.561	65.441	65.292	65.174	65.159	65.050
NON-AG WAGE & SALARY	1153.805	1156.077	1161.815	1168.925	1175.424	1180.573	1180.756	1175.251	1176.544	1187.926	1208.291	1192.756
MANUFACTURING	243.959	244.698	245.769	248.034	249.736	251.387	252.438	252.535	251.186	252.802	257.588	253.800
COAL MINING	34.603	33.961	34.575	34.780	35.894	36.295	36.929	37.456	37.950	37.468	38.071	37.549
CONSTRUCTION	46.204	46.697	46.337	48.329	52.978	55.097	54.332	51.166	54.641	55.446	54.453	55.474
TRADE	263.427	267.543	269.033	270.189	272.834	275.414	275.585	269.610	271.218	274.076	274.505	275.670
TRANSP.+PUB UTILITIES	63.503	63.338	61.730	63.935	62.141	64.053	64.732	63.459	63.008	63.456	63.492	64.016
FINANCE+INS+REAL ES.	53.119	52.924	53.057	53.183	53.937	53.569	54.729	55.004	56.270	58.220	58.762	54.076
SERVICES	224.464	225.005	224.313	222.867	225.996	226.570	227.026	226.795	227.053	229.311	233.293	231.964
CIVILIAN GOVERNMENT	219.790	221.572	222.024	222.511	219.979	219.567	218.552	216.215	214.080	212.460	210.341	211.771

UNITS: EMPLOYMENT DATA ARE IN THOUSANDS OF PERSONS, EXCEPT FOR THE UNEMPLOYMENT RATE.
SOURCE: KENTUCKY ECONOMIC INFORMATION SYSTEM -- SEASONAL ADJUSTMENT BY PROGRAM X-11.

KENTUCKY ECONOMIC INFORMATION SYSTEM

STANDARDIZED TABLE 201
KENTUCKY QUARTERLY ECONOMIC DATABANK
KENTUCKY PERSONAL INCOME: SUMMARY, BY QUARTERS

SERIES		QU 2,1983	QU 3,1983	QU 4,1983	QU 1,1984	QU 2,1984
1	INCOME, TOTAL KENTUCKY PERSONAL,BY PLACE OF RESIDENCE, SEAS ADJ,ANN RATE	34528.99	35112.00	35927.99	37454.98	38429.99
2	INCOME, REAL KENTUCKY PERSONAL, IN 1972 DOLLARS	16226.03	16346.36	16633.33	17181.18	17531.93
10	INCOME, NONFARM PERSONAL, TOTAL (Y$-YAG$)	33949.00	34637.00	35479.00	36575.00	37326.00
11	INCOME, FARM PERSONAL, TOTAL	580.00	475.00	448.00	880.00	1104.00
5	INCOME, WAGE & SALARY TOTAL, BY PLACE OF WORK	19061.00	19453.00	20020.00	20631.00	20945.00
6	INCOME, OTHER LABOR, BY PLACE OF WORK	2244.00	2339.00	2433.00	2532.00	2601.00
7	INCOME, PROPRIETORS, BY PLACE OF WORK (RESIDENCE)	2554.00	2589.00	2638.00	3291.00	3577.00
8	INCOME, PROPRIETORS, FARM	434.00	335.00	312.00	743.00	967.00
9	INCOME, PROPRIETORS, NONFARM	2120.00	2254.00	2327.00	2548.00	2610.00
12	EARNINGS, TOTAL, NONFARM, TOTAL	23279.00	23906.00	24643.00	25574.00	26018.00
13	EARNINGS, TOTAL, NONFARM, PRIVATE	19034.00	19664.00	20261.00	21138.00	21577.00
14	EARNINGS, TOTAL, AG. SERV., FORESTRY, FISHERIES, & OTHER	109.00	116.00	115.00	122.00	118.00
15	EARNINGS, TOTAL, MINING (SIC 10-14)	1397.00	1396.00	1492.00	1594.00	1701.00
16	EARNINGS, TOTAL, CONTRACT CONSTRUCTION (SIC 15-17)	1217.00	1260.00	1270.00	1523.00	1516.00
17	EARNINGS, TOTAL, MANUFACTURING, TOTAL	5669.00	5943.00	6204.00	6396.00	6516.00
18	EARNINGS, TOTAL, MANUFACTURING, NONDURABLE GOODS	2487.00	2566.00	2554.00	2583.00	2625.00
19	EARNINGS, TOTAL, MANUFACTURING, DURABLE GOODS	3182.00	3376.00	3651.00	3814.00	3891.00
20	EARNINGS, TOTAL, TRANS., COMM., & PUB UTIL (SIC40-49)	1886.00	1899.00	1945.00	1939.00	1982.00
21	EARNINGS, TOTAL, WHOLESALE & RETAIL TRADE (SIC 50-59)	3626.00	3726.00	3737.00	3847.00	3898.00
22	EARNINGS, TOTAL, WHOLESALE TRADE (SIC 50-51)	1276.00	1294.00	1289.00	1327.00	1356.00
23	EARNINGS, TOTAL, RETAIL TRADE (SIC 52-59)	2350.00	2432.00	2448.00	2520.00	2542.00
24	EARNINGS, TOTAL, FIN., INS., & REAL ESTATE (SIC 60-67)	1077.00	1123.00	1215.00	1280.00	1281.00
25	EARNINGS, TOTAL, SERVICES (SIC 70-89)	4054.00	4202.00	4284.00	4438.00	4565.00
26	EARNINGS, TOTAL, GOVERNMENT, TOTAL	4246.00	4243.00	4382.00	4436.00	4441.00
27	EARNINGS, TOTAL, GOVERNMENT, FEDERAL CIVILIAN	903.00	915.00	912.00	920.00	922.00
28	EARNINGS, TOTAL, GOVERNMENT, FEDERAL MILITARY	729.00	753.00	764.00	768.00	773.00
29	EARNINGS, TOTAL, GOVERNMENT, STATE & LOCAL	2614.00	2574.00	2707.00	2748.00	2746.00
30	EARNINGS, TOTAL, GOVERNMENT, TOTAL CIVILIAN	3517.00	3489.00	3619.00	3668.00	3668.00
31	INCOME, TOTAL EARNINGS BY PLACE OF WORK (YAG$ + YLPNAG$)	23859.00	24381.00	25091.00	26454.00	27122.00
32	PERSONAL CONTRIBUTIONS TO SOCIAL INSURANCE, BY PLACE OF WORK	1398.00	1424.00	1461.00	1555.00	1574.00
33	INCOME, NET EARNINGS BY PLACE OF WORK	22461.00	22957.00	23630.00	24899.00	25548.00
34	ADJUSTMENT FOR RESIDENCE, KENTUCKY PERSONAL INCOME	185.00	200.00	204.00	200.00	207.00
35	INCOME, NET EARNINGS, BY PLACE OF RESIDENCE	22645.00	23157.00	23834.00	25099.00	25755.00
36	INCOME, PROPERTY: DIVIDENDS, INTEREST, RENTS & ROYALTIES, TOTAL	5762.00	5896.00	6000.00	6217.00	6476.00
37	INCOME, TRANSFER PAYMENTS, TOTAL	6122.00	6059.00	6094.00	6139.00	6199.00
38	INCOME, TRANSFER PAYMENTS, STATE U.I. BENEFITS	510.00	352.00	273.00	221.00	212.00

UNITS: MILLIONS OF CURRENT DOLLARS
SOURCE: U.S. BUREAU OF ECONOMIC ANALYSIS
NOTE: ALL SERIES SEASONALLY ADJUSTED AT ANNUAL RATE.

(Continued from page 2)

Department of Commerce) for 1978-82, with the first-round release of 1983 data; all are now accessible through the KEIS. Quarterly state-level disaggregated personal income estimates from BEA are now available through the 2nd quarter of 1984. Most data series from state agencies are current within a month or two of the period being reported. Disaggregated population estimates for Kentucky and its counties, 1981-82, produced by the Urban Studies Center, University of Louisville, are also now accessible.

• • •

As announced in an earlier issue, the Center for Business and Economic Research is now responsible for the *Working Paper Series* of the College of Business and Economics. A number have been released since July and are available, upon request, from the Center; they include papers authored by faculty from the Departments of Economics and Finance. By title and author, they are:

"Tests for Mean When Observations Are Dependent and Non-Normal," by Mukhtar M. Ali;

"Unions, Seniority, and Public Choice," by D. A. Black and D. F. Parker;

"Measuring the Benefits of Public Goods Provision Using Implicit and Contingent Markets," by Glen Blomquist;

"Discounted Sinking Fund Bond Repurchasing and Shareholder Wealth," by I. Keong Chew and M. Andrew Fields; and

"Factor Intensities in Southern Manufacturing," by Richard Gift, William Marxsen, and James McFayden.

• • •

Several articles in the recent issue of *Growth and Change: A Journal of Public, Urban, and Regional Policy*, the quarterly journal published by the College of Business and Economics, through CBER, may be of interest to readers of *Review & Perspective*. These include "Net Regional Impact of State Education Aid," by Nancy A. Wentzler; "A State Corporation Income Tax: Tax Exporting and Apportionment Formula," by Raymond J. Ring; "Regional Coal Mining Employment in the United States from 1985-2000," by J. David Reed and John H. Hoag; and "Environmental Control and Regional Growth," by Bruce Yandle.

Subscriptions to *Growth and Change* or further information may be obtained by writing to the Editor, c/o Center for Business and Economic Research, College of Business and Economics, 301 Mathews Bldg., University of Kentucky, Lexington, Kentucky 40506-0047.

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Kentucky Economic Review

by Merl M. Hackbart*

The U.S. economy continued to show positive albeit slow growth in the first quarter of 1985 according to preliminary data. Industrial firms and consumers had to cope with a series of somewhat conflicting signals in making production and consumption decisions following a roller-coaster U.S. economic performance in 1984. Quarter to quarter growth rate fluctuations were highly volatile, reflecting adjustments in policies of the Board of Governors of the Federal Reserve (Fed) and other factors. There are mixed signals regarding the factors that will influence 1985 growth. These include Congressional and Administrative actions as they struggle to cope with the federal budget problem, the continued strength of the U.S. dollar, the somewhat vague statements by Federal Reserve Board Chairman Volker regarding the Fed's policies for the rest of the year, and continued questions regarding the stated and actual policies of some of our principal trading partners.

Real Gross National Product (GNP) growth in the final quarter of 1984 was estimated to be 4.3 percent, a sharp increase from the 1.6 percent third quarter growth. The combined effect of growth in the last two quarters with first quarter growth rate of 10.1 percent and a second quarter growth of 7.1 percent led to an annual rate of growth of 6.8 percent for the year. The enhanced fourth quarter growth rate statistics were strongly influenced by data indicating a sharp drop in fourth quarter imports. The reported fourth quarter import drop was, probably, in part, an aberration resulting from a substantial third quarter build-up of import inventories in anticipation of a strong November/December Christmas sales period. For the two quarters, overall import growth was approximately 9.9 percent of real spending as compared to 9.5 percent for the first two quarters of 1984 and 8.3 percent in 1983. Nonetheless, early estimates of growth in real GNP for the first quarter of 1985, at a 1.3 percent annual rate, suggest substantial slowing down in the national economy. Reagan Administration spokesmen attribute this cooling to a surge of imports during the first quarter.

Other key fourth quarter national economic indicators included an unemployment rate of 7.2 percent down from 7.4 percent in the third quarter of 1984. Price level adjustments were minimal with the Consumer Price Index (CPI) rising 0.7 percent, on an unadjusted basis, for the fourth quarter over the third quarter of 1984. This quarter to quarter adjustment, combined with previous 1984 price movements, produced an overall inflation rate for 1984 of approximately 4 percent. The drop in the national unemployment rate for the fourth quarter seems related to increased employment in the construction, trade, and services sectors. There also was healthy improvement, nationally, in manufacturing employment in 1984, an increase of 5.9 percent, but growth in this sector appeared to moderate in the latter part of the year.

January, 1985 data indicate a slight increase in the national civilian unemployment rate, up to 7.4 percent, but February and early March data show a slight decline in the rate to 7.3 percent. Effectively, the national unemployment rate remained stable in 1984, declining slightly toward the end of the year, and appears to be staying stable in the first months of 1985. The continuing consensus view for the remainder of 1985 indicates a real growth rate in GNP of 3.5 to 4 percent down from the 6.8 percent for 1984. However, the consensus view also was for stronger growth in the first quarter, 1985, approximately 4.5 percent, than the 1.3 percent rate now reported for that period.

If the strength of the U.S. dollar continues to place competitive pressure on U.S. industrial production, the Fed will have less incentive to reverse its policy of accommodating stable or lower interest rates. This policy began during the third quarter of 1984 when data for the quarter indicated a slowdown in the economic recovery. The strong dollar continues to forge a difference between growth in U.S. demand, projected to be 3.8 percent, and growth in U.S. production, projected to be 3.6 percent. This gap reflects, in part, the continued import leakage problem. If the Fed continues its policy of accommodating growth in the face of the strong dollar, consumer durables such as automobiles and housing should benefit. However, growth in business fixed investment will probably be moderate, and will result from the interaction of a desire by firms to take advantage of current cash positions and current tax laws, on the positive side, and the dif-

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The Center for Business and Economic Research, College of Business and Economics, University of Kentucky is pleased to announce the release of the *Commonwealth of Kentucky Annual Economic Report—1984*. The focus of this year's report is on characteristics and changes in the Kentucky economy, 1970-1983; it has been authored by Professor Don M. Soule. From his analysis, readers can gain a better understanding of whether the Kentucky economy has tended to follow the waves of national economic fluctuations or whether changes in the Kentucky economy are in a direction separate and distinct from national economic adjustments. Consequently, the report provides insights into where the Kentucky economy has been, an understanding of where it currently is, and a basis for analyzing where it may be headed in the future. In addition, this year's report includes an extended comparison of economic conditions of local areas in Kentucky, and detailed descriptions of the relative importance and recent changes in state and local government revenues.

Many copies of the *Annual Economic Report* have already been mailed. If you did not receive one, but would like to, please fill out the order form on page 15. The report is available for $10; there is no charge for single copies to persons in government, academia, libraries, or others in the nonprofit sector.

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Because considerable staff effort was expended in the preparation of the *Annual Economic Report—1984* we were unable to produce the Winter issue of *Review & Perspective*. We regret this development, and hope now to be back on our traditional publication schedule. As a result of the omission of the Winter issue, we have not published the feature, "Selected Indicators of Economic Activity"—the center pages in each issue of *Review & Perspective*, with data for the U.S. and Kentucky for the third quarter, 1984. Readers who wish to receive a copy of those tables should contact Elsie M. Youmans at (606) 257-7675.

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As previously announced, the Center for Business and Economic Research processes and distributes the *Working Paper Series* of the College of Business and Economics, University of Kentucky. Recently released papers include:

"Adaptive Inventory Policies," by Ralph D. Badinelli;

"Employer Size: The Implications for Search, Training, Capital Investment, Starting Wages, and Wage Growth," by John M. Barron, Dan A. Black, and Mark A. Loewenstein;

"Worker Heterogeneity and On-the-Job Training," by John M. Barron, Dan A. Black, and Mark A. Loewenstein;

"Lifetime Earnings and College Major Choices," by Mark C. Berger;

"A Comparison of Intervention and Residual Analysis," by Jeffery A. Born and Seth Anderson;

"International Diversification and Exchange Rate Regimes," by Jeffery A. Born and Keith H. Johnson;

"Federal Discount Policy and Returns to Owners of Bank Equity," by Jeffery A. Born and James T. Moser;

"Time Diversification, Mutual Funds, Risk, and Implications for IRAs," by Michael D. Carpenter and Keith H. Johnson.

Copies of these papers are available upon request. Please contact Dr. Patricia Y. Smith, Center for Business and Economic Research, 301 Mathews Bldg., University of Kentucky, Lexington, Kentucky 40506-0047.

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This publication provides current information concerning the Kentucky economy. It is a forum for the publication of short expository articles, analyses of some aspect of the Kentucky economy, forecasts of the Kentucky economy, and tables of selected data chosen as indicators of developments in the Kentucky and national economies. The publication also sometimes includes information about enhancements to the Kentucky Economic Information System (KEIS).

Articles submitted for publication should be sent to the Editor at the address given above. All submissions will be reviewed independently by persons recognized as knowledgeable in the specific subject discussed. However, the ultimate responsibility for content rests with the author.

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Leading Indicators of the Kentucky Economy

by Dennis Glennon and Margaret O. Adams*

In recent months the University of Louisville, the University of Kentucky, and the *Louisville Courier-Journal* have combined resources to develop a Leading Indicators Index for the Kentucky Economy.[1] The following article provides background information concerning the development of this index, describes the data series chosen for inclusion in it, and provides insight into the ways in which the index can be used to analyze the past and potential performance of the Kentucky economy.

The development of this Kentucky index represents an attempt to analyze the status and direction of aggregate trends in business conditions in Kentucky. The analysis of overall business cycles that precedes the development of a state economic index might be viewed as an alternative to building a state-level econometric model and forecasting from it. Given that there is a strong tendency for many economic activities to fluctuate in unison, it seems reasonable to believe that an analysis of the cyclical movements of a selected group of business variables, chosen as representative of the major aspects of a state's economy, can be very useful in anticipating future movements in the state's economy.

The index is composed of data series that have been determined as having heralded changes in the level of economic activity in Kentucky over the past several decades. This Kentucky index is intended to provide a tool that will function in terms of the state's economy in a manner analogous to the national Composite Index of 12 Leading Indicators that has been developed by the Bureau of Economic Analysis (BEA), U.S. Department of Commerce, based upon research on movements in the national business cycle that was originally undertaken by the National Bureau of Economic Research.[2] BEA methodology and techniques, including the use of monthly seasonally adjusted data only, have been followed in the development of the Kentucky index. A slight digression to describe the national index may therefore be useful; it comes directly from the background material presented in the monthly publication, *Business Conditions Digest*, published by BEA:

> Business Cycles have been defined as sequences of expansion and contraction in various economic processes that show up as major fluctuations in aggregate economic activity—that is, in comprehensive measures of production, employment, income, and trade. While recurrent and pervasive, business cycles of historical experience have been definitely nonperiodic and have varied greatly in duration and intensity, reflecting changes in economic systems, conditions, policies, and outside disturbances.
>
> One of the techniques developed in business cycle research and widely used as a tool for analyzing current economic conditions and prospects is the cyclical indicators approach. This approach identifies certain economic time series as tending to lead, coincide with, or lag behind the broad movements in aggregate economic activity [the reference cycle]. . . . All cyclical indicators [are] . . . evaluated according to six major characteristics: economic significance, statistical adequacy, consistency of timing at business cycle peaks and troughs, conformity to business expansions and contractions, smoothness, and prompt availability (currency). A formal, detailed weighting scheme was developed and used to assess each series by all of the above criteria.
>
> . . . The information [that resulted], particularly the scores relating to consistency of timing, served as a basis for the selection of series to be included in the composite indexes. The indexes incorporate the best-scoring series from many different economic-process groups and combine those with similar timing behavior, using their overall performance scores as weights. Because they use series of historically tested usefulness and given timing characteristics . . . with diversified economic coverage and a minimum of duplication, composite indexes give more reliable signals over time than do any of the individual indicators. . . .
>
> [The] index of leading indicators [includes] series which historically reached their cyclical peaks and troughs earlier than the corresponding business cycle turns. . . . The leading index contains series with long as well as short leads, but each series leads on the average over time and shows a frequency of leads at the individual turns exceeding that attributable to chance, given the historical distribution of cyclical timing. . . . For purposes of constructing a composite index, each component series is standardized: The month-to-month percent changes in a given series are divided by the long-run average (without regard to sign) of those changes. Thus the more volatile series are prevented from dominating the index. . . .[3]

The time-series of the national Composite Index of 12 Leading Indicators are:

- —average workweek of production workers in manufacturing;
- —average weekly initial claims, State unemployment insurance;
- —new orders for consumer goods and materials in 1972 dollars;
- —vendor performance, companies receiving slower deliveries;
- —net business formation;
- —contracts and orders for plant and equipment in 1972 dollars;
- —new building permits, private housing;
- —change in inventories on hand and on order in 1972 dollars, smoothed;
- —change in sensitive materials prices, smoothed;
- —stock prices, 500 common stocks;

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—money supply (M2) in 1972 dollars; and
—change in credit—business and consumer borrowing.

Data for this index are published in each *Review & Perspective* on the page of Selected Indicators of the United States Economy (page 8 of this issue).

Because many of the series used in the national index are not reported for state economies, and because the national economy, in any case, is not necessarily mirrored in any state's economy, creation of a composite index for a state's economy requires analysis of data that is similar to but unique from analysis undertaken in the building of the national index. The first step is determination of the state's reference business cycle. In this context the national reference cycle can be thought of as a weighted average of all state reference business cycles. The timing, duration, and magnitude of cyclical fluctuations in any state's economy can be expected to differ from the national cycle. Once the state's reference business cycle has been identified, a method for identifying specific data series that tend to move with the reference cycle can be developed, based upon the procedures established for the national index.

At the national level, the reference cycle is related to movements in quarterly values for real (constant dollar) Gross National Product (real GNP), even though the cyclical peaks or troughs are pegged to monthly data. For a state's economy, the corresponding measure of general economic activity would be real Gross State Product; it is very hard to measure accurately or in a timely manner, and is not currently estimated for Kentucky, nor comparably for the states as a whole. In lieu of using Gross State Product and in order to determine the state's reference business cycle, the performance of approximately forty seasonally adjusted monthly Kentucky time series representing a broad spectrum of economic activity was analyzed for the period since 1960.[4]

The product of that analysis—the Kentucky Reference Cycle—is shown in Figure 1. Figure 1 charts the percentage of the representative series that reach a cyclical peak or trough within each three-month period. Determination of this is based upon whether a series changes direction during the period. In other words, if the direction of a series changes from growth to decline, the series has peaked; whereas, if it changes from decline to growth, it has reached its trough. The state's economy is said to have peaked at the point at which the largest percentage of its representative series peak, relatively, or to have reached its trough when the largest number of series reach a trough. Charting these trends is a means of capturing and visualizing the cyclical or wave-like behavior of the collective movement in the state's economic activity. Nonetheless, the turning points for many of the Kentucky cycles are somewhat diffused and so some subjective evaluation of the performance of the economy was also employed before final determination of the reference business cycle. In this evaluation two criteria were used: turning points were chosen near the end of the transition period, and secondly, turning points were chosen to separate the transition period into distinct periods. The peaks and troughs for the Kentucky Reference Cycle have been superimposed on Figure 1 and are listed in Table 1. Table 1 also shows the dates identified by BEA as the peaks and troughs in national business conditions.

FIGURE 1
KENTUCKY REFERENCE CYCLE
PERCENTAGE OF SERIES REACHING SPECIFIC CYCLE PEAKS AND TROUGHS

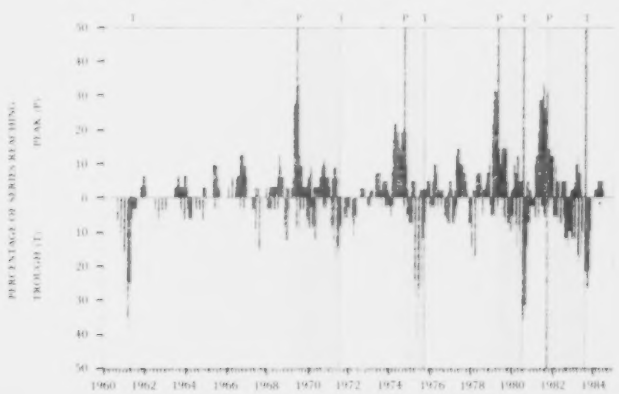


Table 1
Kentucky and National Business Cycle Expansions and Contractions

Kentucky		National	
Peak	Trough	Peak	Trough
	196105	196004	196102
196906	197107	196912	197011
197406	197506	197311	197503
197904	198007	198001	198007
198109	198308	198107	198211

An interesting development is noticeable in the table. For the four expansions and five contractions since 1961, Kentucky has tended to end recessions after the national economy. The lag in the Kentucky economy has been from three to nine months, with the trough in the 1979-80 period seeming to occur at the same time for both Kentucky and the nation. There appears to have been no systematic tendency for Kentucky to lead or lag the national economy going into these recessions. Although the peak of the 1974-75 Kentucky cycle occurred some seven months after the national peak, the 1979-80 cycle peaked in Kentucky about nine months before the national cycle peak. Since the trough of the 1979-80 cycle seems to have occurred in Kentucky at the same time as in the nation, the period preceding the trough, or, the period of contraction and/or decline for the Kentucky economy, exceeded that of the nation. In the last cycle shown in the table, the Kentucky peak seems to have occurred two months after the national peak, suggesting a slightly longer or perhaps slower period of recovery before decline again occurred. In the period that followed, the national economy had a 16-month downward trend, while in Kentucky the decline lasted for 23 months.

Eleven monthly time-series have been selected for the Leading Indicators Index of the Kentucky Economy. They are:

—manhours of Kentucky workers in total manufacturing (a construct that is based upon average weekly hours worked by production workers, multiplied by employment);
—manhours of Kentucky workers in nondurable manufacturing;
—manhours of Kentucky workers in durable manufacturing;
—total Kentucky nonagricultural wage and salary employment;

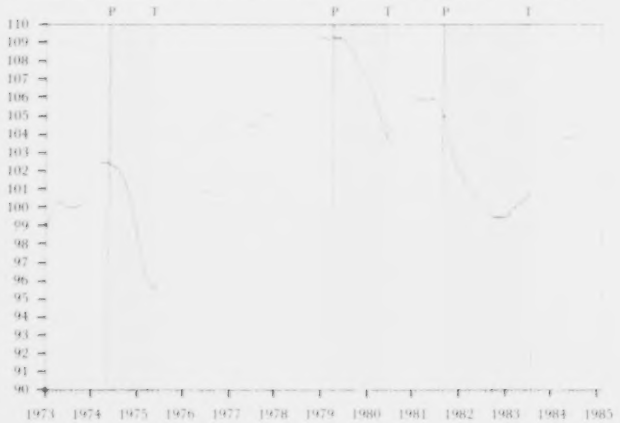
—total Kentucky employment in manufacturing;
—Kentucky employment in coal, rubber, and plastic products manufacturing;
—Kentucky employment in tobacco manufactures;
—earnings from total Kentucky manufacturing (a construct that is based upon average weekly wages of production workers, multiplied by employment);
—earnings from Kentucky distilled liquor manufacturing;
—receipts from the Kentucky individual income tax; and
—registrations of new passenger cars in Kentucky.

These series have tended, as a group, to lead the Kentucky peaks of economic activity by five to six months, and to foreshadow the troughs in the Kentucky reference business cycle by two or three months. In other words, this index tends to give more warning of an impending downturn in economic activity in Kentucky, and to point more gradually to the upturns. Nevertheless, in contrast to its general tendencies, the index preceded the upturn in the state's reference business cycle by only about three months in 1975, and led the downturn in early 1982 by some seven months. The movement of the Kentucky Index of Leading Indicators is shown in Figure 2. As mentioned earlier, all monthly data used in this indicator analysis have been seasonally adjusted.

FIGURE 2

KENTUCKY BUSINESS INDICATOR

COURIER-JOURNAL - UNIVERSITY OF LOUISVILLE - UNIVERSITY OF KENTUCKY



TROUGH (T) PEAK (P)

Base Year 1973 = 100

It is important to note that the Kentucky index primarily is useful for providing a "best guess" of the direction of economic activity for the several months following any given month of analysis, just as the national index is used as a barometer of the direction of the national economy for the near future. Its ability to provide direction is, however, limited by factors unrelated to the business cycle reference points. For example, the index cannot ascertain whether a major industry will move in or leave the state, nor can it control for a firm's decision to relocate elsewhere in the area. Clearly, the Kentucky economy is heavily affected by national and international economic trends; no state-based index, nor for that matter no index based upon historical analysis of business cycles, can incorporate the effects of Presidential, Congressional, Federal Reserve, or international policies into its analysis.

Finally, inclusion of particular data series within an index does not necessarily suggest that these series are, individually, the most reliable reflection of trends in the economy, nor that they individually "drive" the economy. Rather, it is the combined historic performance of these series, as a group, that is defined as the leading indicator for the Kentucky economy. Stated another way, combining series has the effect of summarizing diverse aspects of economic activity into one representative pattern; it is the pattern that provides a useful barometer of overall business conditions within the state.

In the three months since the appearance of the Kentucky index, reporting on data since last October, most of the components have displayed growth and the index as a whole has gradually improved.[3] There have been positive trends in most of the manufacturing components, with the exception of employment in tobacco manufactures and earnings in distilled liquor manufacturing. The latter series declined in November and December, after having shown strong growth in October. Total nonagricultural wage and salary employment has evidenced limited growth. Thus far the tax receipts and passenger car registrations data have given mixed signals. Taken together, the performance of the individual components, and hence of the index as a whole, appears to depend heavily upon activity in the manufacturing sector. This follows, of course, from the fact that of the eleven series which met the criteria outlined above for indicators, eight relate to this sector. The Kentucky manufacturing sector, in turn, is very dependent upon the national economy. Thus, while it is encouraging to note that the Kentucky economy appears to be healthy for now, it is also encouraging to note that the national economy appears to be strong.

Acknowledgments

The authors would like to thank Professors Julia Lane, University of Louisville, and Charles W. Hultman and L. Randolph McGee, University of Kentucky, for their valuable comments and suggestions.

Notes

[1]The development of the Leading Indicators Index of the Kentucky Economy has been a joint project of the School of Business, University of Louisville, and the College of Business and Economics, University of Kentucky, with support provided by the *Louisville Courier-Journal* and both universities. The primary participants in this venture are Economists—Professors Julia Lane and Dennis Glennon of the University of Louisville and Professors Charles W. Hultman and L. Randolph McGee of the University of Kentucky. This project utilizes the Kentucky Economic Information System (KEIS), a resource maintained by the Center for Business and Economic Research, University of Kentucky. All data analyzed for the project, and much of the software utilized in the analysis, are from the KEIS. A similar index has been developed for the Louisville metropolitan economy by Professors Lane and Glennon, with the support of the *Louisville Courier-Journal*, and utilizing the KEIS.

[2]For a full description of this methodology, refer to V. Zarnowitz and C. Boschan, "Cyclical Indicators: An Evaluation and New Leading Indexes," in *Handbook of Cyclical Indicators*, Bureau of Economic Analysis, U.S. Department of Commerce, 1977.

[3]Bureau of Economic Analysis, U.S. Department of Commerce, *Business Conditions Digest*, (monthly), pp. 1-3.

[4]The monthly data series analyzed for determination of the Kentucky reference business cycle were: Kentucky Average Hourly Earnings in Bituminous Coal; Kentucky Average Weekly Earnings in Petroleum, Coal, Rubber, and Plastic Products Manufacturing; Kentucky Earnings at an An-

nual Rate in Total Manufacturing and in Total Durables Manufacturing, and in the manufacture of Distilled Liquors (excluding Brandy), Tobacco, Paints and Allied Products, the group: Petroleum, Coal, Rubber, and Plastic Products, All Machinery, and in Bituminous Coal Mining; Kentucky Resident Employment, Unemployment, and Unemployment Rate; Kentucky Total Nonagricultural Employment; Kentucky Employment of Total Nonagricultural Wage and Salary Workers; Kentucky Employment by Industry for Total Manufacturing, Total Durables Manufacturing, Total Nondurables Manufacturing, Tobacco Manufacturing, Paints and Allied Products Manufacturing, Petroleum, Coal, Rubber, and Plastic Products Manufacturing, Machinery Manufacturing (excluding Electrical), Total Mining, and Bituminous Coal Mining; Kentucky Man-Hours at an Annual Rate for Total Manufacturing, Durables Manufacturing, Nondurables Manufacturing, for the manufacture of Distilled Liquors (excluding Brandy), Tobacco, Paints and Allied Products, All Machinery, and for Bituminous Coal Mining; Tax Receipts in the Kentucky General Fund from Total Income Taxes, and for the Individual Income Tax; Total Physical Output of Bituminous Coal in Kentucky; Total Electricity Generated by Kentucky Electric Utilities; Electric Energy Sales to Kentucky Ultimate Customers excluding residential, industrial, and commercial customers; Average Weekly Claimants for Kentucky Unemployment Insurance; and New Passenger Car Registrations in Kentucky.

[5]See *Louisville Courier-Journal* for January 27, 1985 (pp. E1 and E3), February 24, 1985 (pp. E1-E2), and March 24, 1985 (pp. E1-E2).

(Continued from page 2)

TABLE 1
1982-1984 GROWTH IN TOTAL PERSONAL INCOME
UNITED STATES, SOUTHEASTERN STATES, AND KENTUCKY

	Annual % Changes		Quarterly % Changes							
Regions	1982-83	1983-84	198204-198301	198301-198302	198302-198303	198303-198304	198304-198401	198401-198402	198402-198403	198403-198404
United States	6.2%	9.7%	0.8%	2.0%	1.8%	2.7%	2.8%	2.2%	2.3%	1.5%
Southeastern States	7.1	10.2	1.2	2.1	1.8	2.4	2.9	2.6	2.6	1.6
KENTUCKY	3.9	10.7	−0.8	1.3	1.7	2.2	2.9	3.5	3.1	1.1

Source: U.S. Bureau of Economic Analysis, through the Kentucky Economic Information System.

ference between demand and production growth, noted previously, and concern over the longer term economic outlook on the negative side.

The inflation outlook continues to be favorable with price level adjustments projected to be in the 4 percent range. The consensus view appears to be that the national civilian unemployment rate will stay at its present level of about 7.2 percent, perhaps falling slightly. However, slower growth than predicted for the national economy could result in a marginal increase in the U.S. unemployment rate.

Turning to the Kentucky economic performance for 1984, the annual civilian unemployment rate was 9.3 percent for 1984, down from 11.7 percent for 1983. Although the reduction in the Kentucky unemployment rate was 0.4 percentage points greater than the national unemployment rate reduction during the same period, the Kentucky unemployment rate remained approximately 2 percentage points above the comparable national figure. See Figure 1. Seasonally adjusted revised January data indicate a Kentucky unemployment rate of 8.5 percent, the lowest level since October 1981; this compares to the national figure of 7.4 percent. Should these numbers hold, they would indicate that the Kentucky economy is continuing to recover. More recent data support this assessment.

The latest personal income data available for Kentucky are for the fourth quarter of 1984. Table 1 displays the growth in personal income for the United States, the Southeastern states, and for Kentucky during 1983 and 1984.[1] These data present a mixed picture: Kentucky's 1982-83 personal income growth was significantly below the growth rate of the Southeastern states as a group and of the U.S. as a whole, but was at a slightly higher rate than either of those groups in 1983-84. The greatest degree of growth for each of the areas seems to have occurred during the period from the third quarter of 1983 through the third quarter of 1984, with each of the areas growing more slowly in the latter part of 1984. As more disaggregated data become available, analysis of the sectors where growth has been the strongest, in Kentucky and elsewhere, should provide a better picture from which to anticipate future developments.

A preliminary review suggests that the greatest growth in Kentucky personal income between 1983 and 1984 was in farm earnings, which experienced a 108 percent current dollar increase. Similar growth, though not quite as large, occurred for U.S. farm earnings. It is important to recall, however, that in 1983, Kentucky agriculture suffered almost a 50 percent decline in earnings, while earnings in agriculture nationally fell about 60 percent that year. Nevertheless, Kentucky farm earnings have been contributing only about 3.0 percent to total Kentucky personal income over recent years and so the 1984 earnings improvement in this sector, though dramatic, is but a part of a larger picture. Other Kentucky industries in which total earnings grew in 1984 at a faster pace than total personal income, and the rate of this growth, were: total mining, 19.4 percent; durable goods manufacturing, 16.5 percent; and finance, insurance and real estate, 14.4 percent.

Another aspect of these developments can be observed through analysis of employment trends. Table 2 features average annual growth rates, by industry, for employment in the major nonagricultural sectors of the Kentucky and U.S. economies for the period from January 1982 through January 1985, and from January 1979 through January 1985.[2] Growth rates, or change, are also given for the Kentucky and U.S. employment-population ratio and for the civilian unemployment rate. The final two columns in Table 2 show the percent change in the levels of employment over the full period. What is clear from this table is that the average annual growth rates, 1979-84, for all sectors of the Kentucky economy, except retail trade, were well below the average annual growth rates for the comparable sectors nationally. The situation seems to have improved somewhat in the 1982-84 period, with employment in Kentucky durable goods manufacturing, retail trade, and finance, insurance and real estate growing faster than these industries nationally. In the case of durable goods manufacturing, the more accelerated growth in the recent period needs to be considered along side the significant employment decline in this industry since 1979. In other words, the lag effect of the recovery appears to be continuing. This assessment is further supported by the performance of the Kentucky Leading Indicators index for January 1985. The index, discussed elsewhere in this issue, increased 0.5 percent in January, continuing the upward trend that began in December 1982. It shows no signs of turning.

As noted, the consensus forecast regarding the national growth rate for the remainder of 1985 appears to be in the 3.5 percent range. As some important sectors of the Kentucky economy appear to be growing at a slightly higher rate than the national economy, a Kentucky real economic expansion (i.e. in constant dollar terms) in the 4 percent range appears probable. Caution signs to this moderate growth scenario continue to be the possibility of a change in the "growth accommodating" policy of the Fed, the continuing concern regarding the ability of the Administration and Congress to deal effectively with the federal budget, and the investment decisions of U.S. industry. Recently, analysts have projected a stable Fed policy at least through the second and third quarters of 1985, influenced to a major extent by diminished business fixed investment plans for 1985 over 1984. If such a Fed policy is pursued and if some action is arrived at on the deficit, a slightly more positive growth scenario for the remainder of 1985 may be in order.

TABLE 2
COMPARISON OF US AND KY EMPLOYMENT GROWTH RATES
1979-1984

	Average Annual Growth Rates				Total % Change	
	(1982-1984)		(1979-1984)		(1979-1984)	
Sectors	US	KY	US	KY	US	KY
Employment/Population Ratio	0.95	0.17	−0.02	−0.05		
Civilian Unemployment Rate	−4.65	−2.99	4.28	7.84		
Total Nonagricultural Employment (Excl. Government)	2.35	1.79	1.54	0.31	9.22	1.83
Mining	−6.68	−7.20	1.57	−0.99	9.43	−5.94
Construction	4.62	3.79	0.86	−3.13	5.18	−18.79
Manufacturing	0.53	0.37	−0.95	−2.18	−5.68	−13.05
Nondurable Goods	0.29	−0.64	−0.69	−1.37	−4.14	−8.25
Durable Goods	0.70	1.32	−1.11	−2.72	−6.66	−16.31
Transportation, Communications and Public Utilities	1.31	0.68	0.95	−0.12	5.72	−0.75
Wholesale Trade	2.02	1.59	1.69	0.42	10.15	2.55
Retail Trade	3.52	5.06	1.94	1.95	11.65	11.70
Finance, Insurance, and Real Estate	2.70	3.41	2.82	2.22	16.90	13.33
Services	3.69	3.25	3.95	2.84	23.69	17.05

Note: Monthly seasonally adjusted data, January 1979-January 1985 were used to calculate the average annual growth rates. Average annual growth rates are the mean (*12) of the month-to-month percentage changes. The Kentucky employment/population ratio was calculated on the basis of annual data. The final two columns represent the change from the seasonally adjusted value for January 1979 to the seasonally adjusted value for January 1985 data.

Source: U.S. Bureau of Labor Statistics and Kentucky Cabinet for Human Resources, through the Kentucky Economic Information System.

Kentucky tax data for calendar year 1984 indicate a growth of 7.1 percent for overall General Fund revenues over calendar year 1983. Individual income taxes grew at a 9.8 percent rate over 1983 and corporate taxes grew 15.2 percent. The 1984-85 Kentucky fiscal year (FY 85) began on July 1, 1984. Tax revenue growth by source for FY 85 through March indicate the following growth rates: Total General Fund revenues, 9.3 percent; Sales and Use taxes, 8.3 percent; Coal Severance taxes, 10.5 percent; Individual Income taxes, 13.5 percent; and Corporation Income taxes, 6.7 percent.

The combination of the continuing unemployment rate drop, tax revenue growth and the recent growth in total personal income suggest that the recovery, which started later in Kentucky than in the nation, is continuing in Kentucky.[3]

Acknowledgments

The author wishes to thank Margaret O. Adams for her assistance in the preparation of this article and Yee-Ling Mui for construction of Table 2.

Notes

[1]The states of the Southeast are Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia.

[2]The average annual growth rate is the mean (times 12) of the monthly percent change in the seasonally adjusted employment data for each sector, and of the employment-population ratio (employment as a percentage of population) and the civilian unemployment rate.

[3]See also, Table 1 in the Glennon/Adams article in this issue.

selected indicators OF ECONOMIC A

These tables of selected indicators of economic activity were prepared by a special-purpose program of the Kentucky Economic Information System. The data in the tables are reported figures which were obtained from a variety of state and federal agencies, as well as from private firms.

UNITED STATES DATA

	Oct. 1984	Nov. 1984	Dec. 1984	Qtr. IV 1984	% Chg. 84-III 84-IV	% Chg. 83-IV 84-IV
CONSUMER PRICE INDEXES (1967=100, NOT SEASONALLY ADJUSTED)						
CONSUMER PRICE INDEX, ALL URBAN CONSUMERS, ALL ITEMS (NEW DEF.)	315.30	315.30	315.50	315.37	0.73	4.86
CONSUMER PRICE INDEX, ALL URBAN CONSUMERS, FOOD AND BEVERAGES	296.60	296.50	297.20	296.70	0.17	3.80
CONSUMER PRICE INDEX, ALL URBAN CONSUMERS, HOUSING (INCL. RENTAL EQUIV.)	341.70	340.90	341.20	341.10	0.42	4.29
CONSUMER PRICE INDEX, ALL URBAN CONSUMERS, APPAREL AND UPKEEP	205.20	205.20	203.20	204.70	-2.38	2.24
CONSUMER PRICE INDEX, ALL URBAN CONSUMERS, TRANSPORTATION	315.50	316.10	315.80	315.80	0.84	3.25
CONSUMER PRICE INDEX, ALL URBAN CONSUMERS, MEDICAL	385.50	387.50	388.50	387.17	1.41	6.17
CONSUMER PRICE INDEX, ALL URBAN CONSUMERS, ENTERTAINMENT	258.30	259.00	260.10	259.13	1.09	3.92
CONSUMER PRICE INDEX, ALL URBAN CONSUMERS, OTHER	315.80	316.50	316.70	316.33	2.23	6.21
CONSUMER PRICE INDEX, ALL URBAN CONSUMERS, SPECIAL INDEX: ENERGY	426.70	421.80	418.90	422.47	-1.34	0.35
PRODUCER PRICE INDEXES (1967=100, NOT SEASONALLY ADJUSTED)						
PRODUCER PRICE INDEX, ALL COMMODITIES	309.40	310.40	309.90	309.90	-0.24	1.32
PRODUCER PRICE INDEX, ALL FINISHED GOODS	291.50	292.30	292.40	292.07	0.36	1.69
PRODUCER PRICE INDEX, FINISHED CONSUMER GOODS	290.60	291.10	291.30	290.90	0.25	1.52
PRODUCER PRICE INDEX, INTERMEDIATE MATERIALS	320.10	320.50	319.80	320.13	-0.28	1.44
PRODUCER PRICE INDEX, INTERMEDIATE MATERIALS FOR MANUFACTURING	301.40	301.80	301.10	301.43	-0.36	1.55
PRODUCER PRICE INDEX, CRUDE MATERIALS	319.60	323.70	323.10	322.13	-2.50	1.01
PRODUCER PRICE INDEX, CRUDE FOODSTUFFS AND FEEDSTUFFS	244.90	258.40	253.70	250.67	-2.69	-1.25
PRODUCER PRICE INDEX, BITUM. COAL, INDUSTRIAL, SPECIAL (1=100)	456.10	452.90	448.00	452.33	-1.20	2.24
PRODUCER PRICE INDEX, BITUM. COAL, INDUSTRIAL, CHANGE (1=100)	152.40	154.30	154.00	153.23	-0.85	0.25
PRODUCER PRICE INDEX, ALL CONSTRUCTION MATERIALS	307.10	306.60	307.30	307.00	-0.05	2.10
CONSUMER PRICES: ENERGY (U.S. CITY AVERAGE)						
AVG PRICE FOR UTILITY (PIPED) GAS, PER 40 THERMS	27.59	27.22	27.15	27.32	-1.22	0.50
AVG PRICE FOR UTILITY (PIPED) GAS, PER 100 THERMS	63.45	62.32	61.85	62.54	-2.48	-0.73
AVG PRICE FOR ELECTRICITY, PER 500 KWH	39.44	38.93	38.63	39.00	-2.55	1.48
AVG PRICE FOR FUEL OIL #2 (HOME HEATING OIL), PER GALLON	1.09	1.09	1.08	1.09	-0.40	0.15
AVG PRICE, GASOLINE, ALL TYPES, PER GALLON	1.19	1.19	1.18	1.19	0.08	-3.02
AVG PRICE, GASOLINE, LEADED REGULAR, PER GALLON	1.13	1.12	1.11	1.12	-0.15	-3.28
AVG PRICE, GASOLINE, UNLEADED REGULAR, PER GALLON	1.21	1.21	1.19	1.20	-0.06	-3.17
AVG PRICE, GASOLINE, LEADED PREMIUM, PER GALLON	1.36	1.36	1.35	1.36	-0.05	-1.73
LABOR FORCE (SEASONALLY ADJUSTED, MILLIONS OF PERSONS)						
LABOR FORCE, TOTAL (INCL. RES. ARMED FORCES)	115.72	115.77	116.16	115.89	0.37	1.92
LABOR FORCE, CIVILIAN (EXCL. RES. ARMED FORCES)	114.02	114.07	114.46	114.18	0.38	1.86
EMPLOYMENT, RESIDENT ARMED FORCES	1.70	1.70	1.70	1.70	-0.55	0.67
EMPLOYMENT, TOTAL CIVILIAN	105.65	105.93	106.27	105.95	0.61	3.28
EMPLOYMENT, AGRICULTURE	3.17	3.33	3.38	3.30	-0.28	0.26
EMPLOYMENT, NONAGRICULTURAL	102.48	102.60	102.89	102.66	0.64	3.38
UNEMPLOYED, CIVILIAN, TOTAL	8.37	8.14	8.19	8.23	-2.53	-13.40
UNEMPLOYMENT RATE, TOTAL LABOR FORCE	7.20	7.00	7.10	7.10	-2.89	-15.05
UNEMPLOYMENT RATE, CIVILIAN LABOR FORCE	7.30	7.10	7.20	7.21	-2.90	-15.00
OTHER SELECTED NATIONAL INDICATORS:						
U.S. GROSS NATIONAL PRODUCT (C $) (2 CHG. ANNUAL RATE)	NA	NA	NA	3758.70	7.12	9.58
U.S. REAL GROSS NATIONAL PRODUCT (C 72$) (2 CHG. ANNUAL RATE)	NA	NA	NA	1662.40	4.25	5.70
PERSONAL INCOME, TOTAL, SEASONALLY ADJUSTED (C $'S, CHG. ANNUAL RATE)	3079.50	3092.50	3111.80	3096.20	6.57	9.16
COMPOSITE INDEX OF 12 LEADING INDICATORS (1967=100)	164.10	164.90	164.00	164.33	-0.20	0.96
INDEX OF INDUSTRIAL PRODUCTION, SEASONALLY ADJUSTED (1967=100)	164.46	164.80	165.00	164.73	-0.54	5.94
AVERAGE PRIME RATE CHARGED BY BANKS ON SHORT-TERM BUSINESS LOANS	12.58	11.77	11.06	11.80	-9.14	7.30
INTEREST RATE, YIELD ON 3 MONTH TREASURY BILLS	9.92	8.79	8.16	8.92	-13.25	2.05
PRIVATE HOUSING UNITS AUTH., 17000 PERMIT-ISSUING PLACES (SAAR, 000)	1436.00	1613.00	1627.00	1558.67	8.77	-4.59
TOTAL INSTALLMENT CREDIT OUTSTANDING AT END OF MONTH (C $)	455.32	463.52	472.01	472.01	5.97	20.43

CTIVITY

KENTUCKY DATA

	Oct. 1984	Nov. 1984	Dec. 1984	Qtr. IV 1984	% Chg. 84-III 84-IV	% Chg. 83-IV 84-IV
LABOR FORCE (NOT SEASONALLY ADJUSTED, THOUSANDS)						
LABOR FORCE, TOTAL CIVILIAN	1748.20	1736.39	1737.66	1740.75	1.35	1.89
EMPLOYMENT, TOTAL, BY PLACE OF RESIDENCE	1599.76	1585.14	1575.88	1586.92	0.91	2.91
EMPLOYMENT, AGRICULTURAL	84.10	69.00	53.80	68.97	-9.45	-1.27
EMPLOYMENT, TOTAL NON-AGRICULTURAL	1515.66	1516.14	1522.08	1517.96	1.44	3.16
UNEMPLOYMENT RATE	8.50	8.70	9.30	8.84	4.72	-9.38
EMPLOYMENT, TOTAL NON-AGRICULTURAL WAGE AND SALARY	1227.40	1231.20	1236.40	1231.67	1.94	3.98
EMPLOYMENT, BITUMINOUS COAL & LIGNITE MINING (SIC 12)	40.80	40.00	40.10	40.30	-1.95	9.61
EMPLOYMENT, CONTRACT CONSTRUCTION	54.60	54.40	49.90	52.97	-3.29	7.73
EMPLOYMENT, TOTAL MANUFACTURING	260.60	259.10	260.60	259.90	-0.06	4.70
EMPLOYMENT, MANUFACTURING, DURABLE	145.50	143.80	143.70	144.33	-0.48	7.07
EMPLOYMENT, MANUFACTURING, NON-DURABLE	114.50	115.30	116.90	115.57	0.46	1.88
EMPLOYMENT, TRANSPORTATION, COMMUNICATIONS & PUBLIC UTILITIES	66.30	66.70	66.90	66.63	1.01	4.93
EMPLOYMENT, WHOLESALE & RETAIL TRADE	285.50	291.80	297.00	291.43	3.30	5.82
EMPLOYMENT, FINANCE, INSURANCE & REAL ESTATE (SIC 60-67)	55.90	55.90	56.10	55.97	0.18	4.55
EMPLOYMENT, SERVICES (SIC 70-89)	235.40	233.80	234.80	234.67	0.99	3.50
EMPLOYMENT, CIVILIAN GOVERNMENT	223.90	223.50	225.30	223.90	6.65	-0.64
EMPLOYMENT, STATE & LOCAL GOVERNMENT	183.00	183.40	185.30	183.90	8.37	-0.99
HOURS AND EARNINGS OF PRODUCTION WORKERS IN MANUFACTURING						
AVG WEEKLY HOURS, PROD WORKERS, TOTAL MANUFACTURING	39.40	40.20	40.60	40.07	3.21	0.84
AVG WEEKLY HOURS, PROD WORKERS, MANUFACTURING DURABLES	40.10	41.30	41.30	40.90	2.68	1.24
AVG WEEKLY HOURS, PROD WORKERS, NON DURABLE MANUFACTURING	38.50	39.00	39.90	39.13	5.10	0.51
AVG HOURLY EARN, PROD WORKERS, TOTAL MANUFACTURING	9.46	9.37	9.35	9.39	1.08	3.41
AVG HOURLY EARN, PROD WORKERS, MANUFACTURING DURABLES	10.07	10.04	10.12	10.08	1.65	4.21
AVG HOURLY EARN, PROD WORKERS, NON-DURABLE MANUFACTURING	8.70	8.55	8.43	8.56	0.78	3.05
AVG WEEKLY EARN, PROD WORKERS, TOTAL MANUFACTURING	372.72	376.67	379.61	376.33	4.82	4.27
AVG WEEKLY EARN, PROD WORKERS, MANUFACTURING DURABLES	403.81	414.65	417.96	412.14	4.37	5.49
AVG WEEKLY EARN, PROD WORKERS, NON-DURABLE MANUFACTURING	334.95	333.45	336.36	334.92	5.89	3.58
MINING (MILLIONS OF TONS, MILLIONS OF TAX DOLLARS)						
BITUMINOUS COAL & LIGNITE, PHYSICAL OUTPUT, EASTERN KY, TOTAL	8.40	7.65	7.60	23.65	36.90	-7.74
BITUMINOUS COAL & LIGNITE, PHYSICAL OUTPUT, WESTERN KY, TOTAL	3.03	2.94	2.90	9.07	19.92	0.44
AVG HOURLY EARN, PROD WORKERS, BITUMINOUS COAL & LIGNITE MINING	14.57	15.17	15.17	14.97	5.57	5.94
AVG WEEKLY EARN, PROD WORKERS, BITUMINOUS COAL & LIGNITE MINING	558.03	641.69	628.10	625.94	6.81	30.23
AVG WEEKLY HOURS, PROD WORKERS, BITUMINOUS COAL & LIGNITE MINING	38.30	42.30	44.70	41.77	2.29	22.23
TAX RECEIPTS, COAL SEVERANCE, CONSOLIDATED, TOTAL	19.13	15.75	15.60	50.48	*	3.54
HOUSING (MILLIONS OF $, NO. OF PRIVATE RESID. UNITS--NOT SEAS ADJ)						
VALUE OF CONSTRUCTION CONTRACTS, RESIDENTIAL & NON RES	252.70	128.90	82.30	463.90	-13.53	-8.52
HOUSING UNITS, PRIVATE STRUCTURES, PERMIT AUTHORIZED, 1 UNIT	483.00	423.60	264.00	1170.00	-16.55	-0.59
VALUATION, HOUSING UNITS, PRIVATE STRUCTURES, PERMIT AUTH, 1 UNIT	35.36	21.34	14.33	61.04	-14.28	8.26
HOUSING UNITS, PRIVATE STRUCTURES, PERMIT AUTHORIZED, TOTAL	1397.60	945.00	653.00	2995.00	-6.87	46.31
VALUATION, HOUSING UNITS, PRIVATE STRUCTURES, PERMIT AUTH, TOTAL	37.07	32.81	20.93	90.80	-17.10	21.07
NET LOANS MADE & ACQUIRED BY KY, SAVINGS & LOAN ASSOCIATIONS	12.49	67.97	-31.15	49.31	-285.86	67.75
RETAIL SALES (MIL $, 000 EARS)						
TAX RECEIPTS, GENERAL FUND, SALES AND GROSS RECEIPTS	83.32	74.93	73.11	231.37	*	8.03
NEW PASSENGER CAR REGISTRATIONS, TOTAL, NOT SEAS. ADJ.	9.66	8.04	6.86	24.56	*	-25.80
SELECTED STATE GOVERNMENT RECEIPTS (MIL $)						
TAX AND NONTAX RECEIPTS, GENERAL FUND, TOTAL	209.74	237.89	228.82	676.44	*	8.63
TAX RECEIPTS, GENERAL FUND, SALES & USE TAXES, TOTAL	71.19	68.06	67.51	206.75	*	7.02
TAX RECEIPTS, GENERAL FUND, INCOME TAX, INDIVIDUAL	68.53	62.68	61.92	193.14	*	7.41
TAX RECEIPTS, GENERAL FUND, INCOME TAX, CORPORATION	9.84	4.41	34.10	48.35	*	4.25
TAX RECEIPTS, STATE ROAD FUND, STATE SHARE	35.80	32.76	31.42	104.88	*	12.72
TAX RECEIPTS, STATE ROAD FUND, MOTOR FUELS TAXES, NONDAI	16.05	16.22	16.18	48.51	*	2.07
TAX RECEIPTS, STATE ROAD FUND, MOTOR VEHICLE USAGE TAX	13.98	10.59	10.76	35.33	*	20.37

PRIVATE SOURCES FOR THE ABOVE DATA INCLUDE:
F. W. DODGE DIVISION (MCGRAW-HILL INFORMATION SYSTEMS COMPANY):
VALUE OF CONSTRUCTION CONTRACTS;
R. L. POLK & COMPANY, NEW CAR REGISTRATIONS (NA FOR OCT. '83)

NOTE: THE DATA ON PERMIT AUTHORIZED CONSTRUCTION COME FROM THE BUREAU OF THE CENSUS, U.S. DEPARTMENT OF COMMERCE AND REPRESENT THE KENTUCKY PORTION OF THE NATIONAL SURVEY OF 17,000 PERMIT ISSUING PLACES

* = QUARTER TO QUARTER COMPARISONS NOT MEANINGFUL DUE TO SEASONAL VARIATION

SUPPLY AND DEMAND FOR U.S., APPALACHIAN, AND KENTUCKY COAL

by Curtis E. Harvey*

The Supply of Coal

Following World War II, energy usage in the United States and throughout the world switched significantly from coal to the new glamour fuels of oil, natural gas, and on the horizon, nuclear power. Railroads began using diesel fuel and industry and manufacturing followed suit. Oil and natural gas were more convenient fuels to use and the relative price levels made the shift economically attractive. As a result, the coal industry reached a production trough during the 1960s; by the end of the decade, however, it began to recover. From the 1960 level of 413 million short tons, U.S. coal production grew to 603 million short tons in 1970, an increase of 47 percent. In subsequent years, in response to the 1973 OPEC (Organization of Petroleum Exporting Countries) oil shock and other factors, interest in coal as a future energy source surged anew. For the first part of the 1970s, U.S. coal production remained relatively constant, but beginning with 1975, it grew rapidly, reaching an all-time high of 833 million tons in 1982. Total production of U.S. coal and regional contributions to total production, for 1970, and 1980-83 are shown in Table 1.

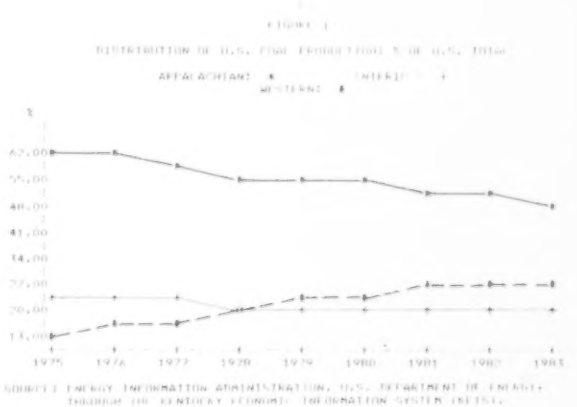
TABLE 1
U.S. COAL PRODUCTION, BY COAL-PRODUCING REGIONS
(In millions of short tons)

Region	1970	1980	1981	1982	1983	% Change 1970-1983
U.S. Total	601.9	825.7	815.2	832.5	776.6	+ 28.8%
Appalachian	417.8	438.6	425.2	427.9	378.0	− 9.5
Interior	149.9	176.6	166.1	177.9	173.4	+ 15.7
Western	35.1	210.5	223.9	226.7	225.3	+541.0

Source: Energy Information Administration, U.S. Department of Energy. *Coal Production* (an annual publication). Data for 1970 are from the U.S. Department of the Interior's *Minerals Yearbook 1970*.

As can be seen in the table, production in 1981 actually fell off somewhat—815 million tons compared to 826 million tons in 1980—due primarily to a weakening national economy. It did not fall off further because of unexpectedly strong export demand. The surge in 1981 exports, an increase of 23 percent over 1980, was due largely to foreign purchases of U.S. steam coal in the spot market. Political unrest in Poland and widespread strikes in Australia led to serious disruptions in the deliveries of coal from these countries. Concerned European buyers thereupon sought out U.S. coal producers to make up their deficiencies. The coal export boom began to gather force in late 1980, lasting through 1981 and part of 1982. By the end of that year, however, it had pretty much run its course, so that the last few months recorded weak shipments abroad.

The relative contributions of each coal producing region are illustrated by Figure 1 for the 1975-83 period. Both Table 1 and Figure 1 highlight the very pronounced structural changes that have occurred in regional outputs of coal. In 1970 the Western coal producing states combined for a production level that was under 6.0 percent of total national output; by 1983, this level had risen to an all-time high of 29 percent of the U.S. total. The percentage of production for 1970, and 1980-83, of the various regions and their component states is shown in Table 2. Several additional factors are apparent from the tables.



First, Eastern Kentucky, Pennsylvania, and West Virginia are the primary producers of Appalachian coal. Since 1970, the relative output from the Appalachian region has declined steadily, with actual 1983 production 9.5 percent below the 1970 level. The decline has been most precipitous for West Virginia. Eastern Kentucky's relative contribution to total national production was at the same level in 1983 as in 1970, i.e., 12 percent of the total, despite the fact that actual coal production in Eastern Kentucky in 1983 was almost 32 percent above production in 1970. The production increase in Eastern Kentucky, and the production decline in West Virginia, allow Kentucky (Eastern and Western coalfields) to retain its postion as the number one coal producing state in the nation, a position it has held since 1973.

It is strikingly clear also that the states in the Western Coal region, most notably Wyoming, have become increasingly important contributors to the national coal market. Overall ac-

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TABLE 2
DISTRIBUTION OF U.S. COAL PRODUCTION, BY COAL-PRODUCING REGIONS AND STATES, 1970, 1980-1983

Coal Producing Region and State	1970	1980	1981	1982	1983
U.S. Total	100.0%	100.0%	100.0%	100.0%	100.0%
Appalachian Total	69.3	53.1	52.2	51.4	48.7
Alabama	3.3	3.4	3.0	3.2	3.0
Kentucky, Eastern	12.8	12.0	14.2	13.1	12.0
Maryland	0.5	0.3	0.5	0.5	0.4
Ohio	4.8	9.2	4.4	4.4	4.3
Pennsylvania	13.3	11.2	10.2	9.4	8.9
Tennessee	1.4	1.1	1.2	0.9	0.8
Virginia	5.8	4.9	5.0	4.7	4.4
West Virginia	23.9	14.6	13.8	15.4	14.8
Interior Total	24.9	21.4	20.4	21.4	22.3
Illinois	10.8	7.6	6.4	7.2	7.3
Indiana	3.7	3.8	3.6	3.8	4.1
Iowa	0.2	0.1	0.1	*	*
Kansas	0.3	0.1	0.2	0.2	0.2
Kentucky, Western	8.8	4.9	4.8	4.7	4.6
Missouri	0.7	0.7	0.6	0.6	0.6
Oklahoma	0.4	0.7	0.7	0.6	0.5
Texas	—	3.7	4.0	4.2	5.0
Western Total	5.8	25.5	27.4	27.2	29.0
Alaska	0.1	0.1	0.1	0.1	0.1
Arizona	*	1.3	1.4	1.5	1.5
Colorado	1.0	2.3	2.4	2.2	2.2
Montana	0.6	3.6	4.1	3.3	3.7
New Mexico	1.2	2.3	2.3	2.4	2.6
North Dakota	0.9	2.1	2.2	2.1	2.5
Utah	0.8	1.6	1.7	2.0	1.5
Washington	*	0.6	0.6	0.5	0.5
Wyoming	1.2	11.5	12.6	13.2	14.4

* Less than 0.1 percent

Source: Same as Table 1.
Note: Amounts may not sum to 100 percent because of rounding and omission of states producing less than 0.1 percent of the total.

tual production from the Western region was more than 500 percent greater in 1983 than in 1970. A close reading of Table 2 also indicates that by the 1980s, the Western Coal region was mining considerably more coal than the Interior region and that its emergence into and increasing share of the national market came at the expense of both of the other two U.S. coal regions.

The explanation for the phenomenal growth in Western coal output lies in two main factors: the low mining costs in the West due to very large and wide seams located close to the surface, and secondly, the low sulphur content of these coals. Despite the sizeable cost penalties which distance from mine imposes on coal consumers, and the relatively low heating value of Western coal, its delivered cost per heating unit (BTU) remains attractive. This has allowed it to compete successfully in markets heretofore considered the exclusive domain of the Interior Basin. In short, Western coal suppliers have been making increasing inroads into markets traditionally serviced by Interior Basin coal, and to a lesser extent into some markets east of the Mississippi which traditionally have been tied to Appalachian coal. Interior Basin coal is generally higher in sulphur content than much of the Appalachian and all of the Western coal, and in a world of tightening ambient air standards, is less marketable.

Nevertheless, in the near future it is unlikely that Western coal will become a widely used fuel in the eastern part of the U.S. High transport costs make its delivered price noncompetitive with low-sulphur Appalachian coal. For the longer term however, the relative sizes of the reserve base becomes important. The demonstrated reserve base of coal in Montana and Wyoming is estimated at approximately 40 percent of the U.S. total. Appalachian reserves, on the other hand, are estimated at only 24 percent of the U.S. total. If one accepts the assumption that the best and most easily accessible coal was mined first, then one can also assume that the dwindling reserves of coal in some parts of Appalachia, including Eastern Kentucky, cast a distant shadow on what otherwise would be an optimistic outlook. This is the case for supplies beyond this and at least one more future generation.[1] As minable reserves decrease, the costs of underground mining are likely to increase, placing Appalachian coal in a less advantageous position related to Western coal. In addition, regarding surface mining costs, implementation of the federal Surface Mining Control and Reclamation Act has placed permitting and reclamation requirements for all states on an equal footing. In Eastern Kentucky the effect has been to multiply the entry and reclamation costs for surface mining.

The Demand for Appalachian Coal

The demand for coal, like the demand for all factor inputs, derives from the demand for the final products in whose production coal, and other inputs, participate. The demand for coal as an end-use commodity is small, confined to that portion of the market where coal is burned directly by consumers for home heating. By far the largest source of demand for coal originates with the electric power producing companies, i.e., the electric utilities. While nearly all sources of demand for Appalachian coal experienced some declines in the early 1980s, the electric utility demand, the largest demand source by far, declined relatively little.

Table 3 illustrates the origin of demand for Appalachian coal by the domestic electric utilities, by all other domestic consumers of coal, and for export, for the period 1970, 1975, and 1980-83. Included in the 'other uses' domestic consumers category are industrial, transportation, and residential and commercial users. This group experienced a declining demand for coal up to about 1973, mostly because oil and natural gas were substituted increasingly for coal. From 1974 on, this decline was arrested as some industries substituted coal-fired

TABLE 3
DISTRIBUTION OF APPALACHIAN COAL BY END USER
1970, 1975, 1980-1983
(In millions of short tons shipped)

User	1970	1975	1980	1981	1982	1983
Domestic						
Electric utilities	193.1	218.3	245.5	235.9	241.1	235.3
Coke	92.3	81.9	58.4	51.2	35.3	33.8
Other uses (retail, industrial commercial, transportation)	74.0	39.9	39.6	39.5	36.6	40.2
Exports						
Canada			15.8	14.9	16.2	15.8
Elsewhere	51.3	48.2	72.8	83.4	81.4	56.5
Total Shipments	410.6	388.2	432.1	424.8	410.5	381.6

Source: U.S. Department of Interior, Bureau of Mines, *Mineral Industry Surveys, 1970* and *1975*. U.S. Department of Energy, Energy Information Administration, *Coal Distribution, 1980-83*. Both published in Washington, D.C., by Government Printing Office (1970 and 1975 for the former and 1980-83 for the latter).

Note: For 1970 and 1975, shipments to Canada and Mexico are included in the domestic shipments. For 1980-83, Canadian shipments are reported separately and Mexican shipments are included in exports elsewhere. Columns may not add to total due to rounding. Production and shipment data are not identical since coal produced in one year may not be shipped until subsequent years.

furnaces for oil and natural gas-fired ones because of OPEC price rises, the 1977 natural gas shortage and the doubling of oil prices in 1979. But despite these changes, the demand for coal from this group did not exceed 10 percent of total coal consumption in any of the years since 1974.

On the other hand, an increase in demand for coal from the export market can be noted during the early 1980s. It primarily reflects increased demand from European countries, as well as from Japan. Historically, Appalachia and more particularly, District 8 (Eastern Kentucky, Tennessee and parts of Virginia and West Virginia), has provided virtually all of the coal exported from the U.S.; District 8 has been the largest coal exporting district in the nation. As discussed above, the 1980s increase in export demand was short-lived and related to disruptions in the traditional sources of coal supplies to Europe, and to some extent, to Japan. It was clear from the beginning of the export boom that the situation was temporary, since foreign buyers were unwilling to commit themselves to long-term contractual obligations.

Japan, which in 1983 bought 23 percent of U.S. coal exports and Canada, which purchased 22 percent of total U.S. coal exports that year—primarily from Appalachia— are the primary foreign buyers of U.S. coal. In the case of both countries, sales of American coal are quite dependent upon economic conditions in those countries. Since both export a significant portion of their industrial output to the U.S., they in turn depend on the level of economic activity in the U.S. When the economy declines in the U.S., Japanese and Canadian demand for U.S. coal weakens. Hence the vigor of the U.S. economy influences not only the direct domestic demand for coal but also indirectly, the foreign demand.

Turning to a discussion of demand for coal from the electric utilities, over 50 percent of the electricity produced in the U.S. in 1983 originated from coal. For the remaining 50 percent, hydropower, natural gas, and nuclear resources were used about equally with petroleum, the least used energy source for electric power. The largest demand for Appalachian coal also comes from the electric utilities which consumed approximately 62 percent of this coal in 1983 (see Table 3). Although this is a smaller percentage than the 85 percent of total U.S. coal that is sold to the electric utilities, it is a considerable increase over the 47 percent of total Appalachian coal that was sold to electric utilities in 1970. To some extent this increase is related not only to increased production of electric power but also to the decreasing sales of Appalachian coal to coking plants. Declines in demand for coking coal results from the steady reduction in the coke requirement in the making of steel. This is due both to advances in steel-making technologies and to a world-wide excess capacity to produce steel, combined with vigorous foreign competition in the sale of unmanufactured steel.

Of the Appalachian states, Eastern Kentucky is the largest single supplier of coal to domestic electric utilities. In the past ten years, its shipments to power plants doubled, while those from West Virginia, Virginia, and Pennsylvania increased only modestly. Eastern Kentucky's coal is low in sulfur, high in BTU content, and has traditionally not been hampered as much by supply interruptions as coal mined elsewhere in Appalachia. However, in addition to competing on the basis of quality with other Appalachian coals, Eastern Kentucky coal must also compete on the basis of location. This is, of course, due to the impact of distance on transportation costs and therefore on delivered price.

An examination of the coal markets served by Eastern Kentucky reveals that sales are limited generally to an area approximately 500 miles in radius from the region. Only coal shipped by barge, a less costly means of transport than the rails, can be readily sold to domestic points more distant. Table 4 details the shipments of coal from Eastern Kentucky to U.S. electric utility plants, by state, for 1983. While it is clear that some states depend on Eastern Kentucky coal more than others, Kentucky shippers encounter a rather dispersed market. This dispersion can be viewed as representing a degree of security to mining operators, because even if one or more state markets are lost, the overall impact on the Eastern Kentucky coal industry would be small. In addition, similar dispersion of markets is also reflected in shipments of coal from Western Kentucky to domestic electric utilities.[2]

TABLE 4
COAL RECEIVED FROM EASTERN KENTUCKY AT ELECTRIC UTILITY PLANTS, 1983

Region and State	Thousands of Tons Received	% of E. Ky. Shipments to Electric Utilities	E. Ky. Coal % of Receipts by Electric Utilities
Middle Atlantic			
New Jersey	31.1	0.1%	1.0%
New York	258.0	0.4	4.0
Pennsylvania	27.3	0.0	0.1
Total	316.3	0.5	
South Atlantic			
Delaware	35.9	0.1	1.3
Florida	4146.4	6.7	32.2
Georgia	9834.9	16.0	45.0
North Carolina	7737.2	12.6	37.7
South Carolina	6210.2	10.1	89.1
Virginia	2155.0	3.5	31.6
West Virginia	981.0	1.6	3.6
Total	31,100.6	50.5	
East North Central			
Illinois	1048.6	1.7	0.8
Indiana	3.5	0.0	0.0
Michigan	8405.8	13.7	37.5
Ohio	6699.0	10.9	16.5
Wisconsin	31.0	0.1	0.2
Total	16,187.9	26.3	
East South Central			
Alabama	133.7	0.2	0.8
Kentucky	8443.0	13.7	34.7
Mississippi	970.1	1.6	27.0
Tennessee	4398.4	7.1	27.0
Total	13,945.2	22.7	
West North Central			
Iowa	9.1	0.0	0.1
Minnesota	3.0	0.0	0.0
Total	12.1	0.0	
Grand Total	61,562.0	100.0	

Source: Energy Information Administration, U.S. Department of Energy, *Cost and Quality of Fuels for Electric Utility Plants* (Washington, D.C.: Government Printing Office, 1984).

The Prospects for Coal

The short and long-term prospects of the coal industry, and especially of Appalachian coal, will be determined to a large

extent by governmental policy in the U.S. and abroad. For the remainder of the decade—the short run— domestic coal consumption and the export sector are likely to grow only modestly, consistent with historic averages. In the relatively stable energy environment of today, and in the absence of traumatic shocks, coal production, price and profit levels are not expected to diverge greatly from trends established over the last decade. In 1983 and 1984, price appears to have settled near the long run equilibrium cost of mining coal, and few significant technological breakthroughs are likely to be implemented soon that would disturb this equilibrium.

The general consensus of projections examined by the author is that coal consumption by the electric power industry will grow at an average annual rate of 2.5 percent, and perhaps even less vigorously.[5] This growth rate is considerably lower than the projected rates for the economy in general and reflects a continuing trend of energy conservation which started in the mid to late 1970s, and which is expected to continue through the 1980s. The modest rate of growth is also attributable to the weakened state of the national and world economies in recent years, the expected growth of the service sector of the economy which in itself is less energy intensive than basic industry, and to the structural changes in the use of energy.

Overall, the demand for coal emanating from the industrial sector is dependent upon growth in the sector and the conversion from oil and gas to coal-fired industrial furnaces. Neither of these sources of additional future demand are likely to materialize in the 1980s. The costs of investment capital are predicted to remain high, and few prognosticate a surge in industrial production over the next few years. Despite the slow growth of the industrial sector, the average forecast for changes in coal demand is approximately 3.8 percent for the period 1983-90.

The consensus of the forecasting firms on the demand for coking, or metallurgical coal, at a 5.6 percent growth rate for the remainder of the 1980s, appears to the author to be overly optimistic. If the notion is accepted that the demand for metallurgical coal depends essentially on the demand for steel and only secondarily on the price of coal, then there remains little room for optimism. The reasons for the decline in the demand for coking coal in recent years, discussed earlier, will continue to hold in the future.

The final demand category included in the consumption forecasts reviewed by the author is exports. This category is beset by larger variations in estimates than any other demand category, ranging from an average annual decline of nearly 1.0 percent to an increase of as much as 5.7 percent. The export market is clearly the most difficult to predict, not only because exports are composed of two distinct end uses for coal—steam and metallurgical, but also because a host of unpredictable economic, political and environmental factors can dramatically influence future coal flows. In addition, the path the international value of the dollar will follow in the future is impossible to predict. However, given the sizeable U.S. budget deficits that now appear structurally entrenched, interest rates may well remain high by historic standards for the remainder of the decade. This would, of course, keep the dollar at its present lofty levels—a most unattractive prospect for coal exporters.

Another consideration regarding the prospects for coal is that the welfare of the coal industry has, historically, closely followed fluctuations in the price of petroleum and the overall welfare of the oil industry. That is, the price of coal moves in the same direction as the price of petroleum, albeit at a lower level and with a time lag. This so-called "price-tracking" means that when the price of oil rises, coal becomes a more attractive substitute. That the world is generously endowed with petroleum reserves is now well-documented; the technological feasibility of the substitution of coal for oil does not exist for the short-term. In addition, the coal industry is quite vulnerable to falling oil prices since coal and oil are competitors in world energy markets. Coal also has two other competitors: nuclear power and natural gas—both of which have also been expanding their market share, although they are less likely to continue doing so in the coming decade.

The result of these varied forecasts is a projection of U.S. coal demand in the neighborhood of 950 million to a billion tons of coal by 1990, or an increase in demand over the 1983 level of 2.9 percent. In short, the projected future holds only modest growth for the coal industry. Overall, the desire for greater output is moderated by the continuing worldwide effects of the crushing recession in the industrial world in the first part of the 1980s, continuing grievous levels of unemployment, and unacceptable levels of inflation in some countries. All of this has had a significant effect on the demand for coal, leaving it stagnant.

Notes

[1] A word of caution must be considered at this point. The data published by the U.S. Department of Energy on Demonstrated Reserve U.S. Base of Coal, which suggest that Eastern Kentucky has 78 years (mine life) of underground mining remaining, and 67 years of surface mining remaining, are based upon an assumption that only 50 percent of the underground and 80 percent of the surface reserves demonstrated will be recoverable in the future. New reserve discoveries or altered economic feasibilities can significantly change the mine life picture, and in any case, these assumptions may be conservative. For example, they may mask the fact that experienced mine operators often extract considerably more coal from their seams than 50 or 80 percent. Nonetheless, mining conditions vary greatly from one region to the next; what may be economically minable in the 1980s may or may not be in coming years.

[2] There were eight states in 1983 to which an equal or greater volume of coal was shipped from Western Kentucky than from Eastern Kentucky. The states, together with the percentage of total coal received from Western Kentucky were: Tennessee, 49.2 percent; Kentucky, 48.6 percent; Florida, 32.2 percent; Wisconsin, 14.3 percent; Indiana, 7.6 percent; Alabama, 6.7 percent; Minnesota, 0.6 percent; and Iowa, 0.1 percent. Energy Information Administration, U.S. Department of Energy, *Cost and Quality of Fuels for Electric Utilities, 1983* (Washington, D.C.: Government Printing Office), 1984.

[3] The forecasts examined in this analysis come from the U.S. Department of Energy's *Annual Energy Outlook, 1983* published by the Energy Information Administration in May 1984; *Coal Market Assessment*, Fall-Winter 1983 by ICF, Washington, D.C.; *Energy Review*, Winter 1983-84, by Data Resources, Inc. (DRI), Lexington, Mass., January 1984; *Chase Energy Analysis Quarterly*, Fourth Quarter 1983, Chase Econometrics, Bala Cynwyd, Pa., January 1984; *Long Range Forecast for U.S. Coal, Coal Markets in the Future*, National Coal Association, Washington, D.C., March 1984; and *General Marketing Trends and Forecasting*, Nerco Coal Co, Cincinnati, Ohio, July 1984.

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SUMMER 1985
Vol. 9, No. 2

Kentucky Economic Review

by Merl M. Hackbart*

The U.S. economy continues to struggle under the combined effects of intense foreign competition, continued relatively high "real" interest rates and an uncertain national economic policy. The uncertainty regarding economic policy produces caution among decision-makers in the public and private sectors as they await the ultimate resolution of such critical business and consumer-related issues as tax reform, foreign trade policy, revenue enhancement, and federal program cuts designed to deal with the chronic federal deficit problem. Indications of a stagnating national economy include first and second quarter growth rates for real Gross National Product (GNP) of 0.3 and 2.0 percent, respectively. The resulting condition approaches a "growth recession": economic growth that is insufficient to absorb growth in the size of the labor force.

The current national economic recovery has been principally fueled by a Keynesian style stimulus of federal deficit spending. In other words, the enhanced aggregate demand effects of the increasing federal deficits during the recent past, growing from $148 million in 1982 to $176 million in 1984, have buoyed the economy during an economic period which otherwise might have had recessionary tendencies, rather than moderate recovery. Recessionary tendencies are often the product of high interest rates. During 1984, the prime rate averaged 12 percent and during the same period there was the growth compressive effect of a strong U.S. dollar abroad.

The positive growth effects of the Reagan Keynesian stimulus have been complemented by a growth-accomodating Federal Reserve (Fed) policy. The pro-growth policy of the Fed during the last year has reflected a concern that foreign competition was stifling domestic manufacturing activity and that a restrictive monetary policy might lead to a recession. In the last nine months, for example, the Fed has generated 19.6 percent growth in nonborrowed reserves, including extended credit. This augmented liquidity supply has permitted interest rates to decline without a commensurate drop in demand for funds by the federal government. In addition, this accommodating Fed policy reversed earlier tendencies to signal discomfort with growing federal deficits by threatening or imposing tighter monetary controls.

The emerging economic policy question then is whether the President and Congress can fashion a federal budget and appropriations bill package which will deal sufficiently with the federal deficit problem, permitting the Fed to continue its growth accommodating policy. In the absence of such budget and appropriations action, the Fed probably cannot continue its current rate of reserve expansion without incurring inflationary repercussions. If the Fed reacts to insufficient deficit action by slowing reserve expansion, interest rates will have a tendency to rise in response to competition for available credit dollars. Such a rise will have a stifling effect on the economy and nudge it toward a recession in early 1986.

National forecasting groups suggest that if current deficit plans are approved, a credit crunch may be narrowly avoided. If it is, interest rate levels may remain at or near current levels and these would assist the consumer durables industries and aid U.S. industry in general to carry out more aggressive investment plans. Such a scenario would, in turn, mean avoiding a significant downturn in the economy in 1986 and beyond.

As noted above, first and second quarter growth rates of 0.3 and 2.0 percent for the U.S. economy, or an overall growth rate for the first six months of 1985 of 1.1 percent, indicate that the performance of the U.S. economy for all of 1985 will be considerably lower than previously issued projections of 3 to 4 percent growth. National economic growth has been sluggish for most of the past twelve months. Stable national civilian unemployment rates during recent months of approximately 7.3 percent resulted from rises in employment in service-producing industries, some of which is seasonal, accompanied by pervasive declines in the goods-producing sectors. Manufacturing employment has been falling for several months, including declines in "high-technology" industries that have been damaged by the continued pressure of the overvalued dollar. Price level ad-

(Continued on page 9)

Merl M. Hackbart is Professor of Finance and Public Administration, College of Business and Economics, University of Kentucky.

Earlier this year Governor Martha Layne Collins issued an Executive Order establishing a Governor's Financial Policy Council and abolishing the former Council of Economic Advisors. Appointed to the Council were William E. Scent, Chairman, a Paducah attorney; Professor Richard A. Dolin, Bellarmine College; former Lieutenant Governor, Wilson W. Wyatt, Sr., Louisville; Professor Merl M. Hackbart, Lexington; and state officials, Gordon C. Duke, Secretary of the Finance and Administration Cabinet; Gary W. Gillis, Secretary of the Revenue Cabinet; and Larry Hayes, State Budget Director.

The first meeting of the Governor's Financial Policy Council was held on May 29, 1985, at which time Professor H. Brinton Milward, Director of the Center for Business and Economic Research, University of Kentucky, provided an overview, "Kentucky's Economy in Perspective," followed by a discussion with three Kentucky economists: Professors Lawrence K. Lynch, Transylvania University; James R. McCabe, University of Louisville; and Charles W. Hultman, University of Kentucky. Subsequent meetings of the Council were held in July and August and included a presentation on Kentucky's revenue trends and estimates by James A. Street, Kentucky Revenue Cabinet, and on Kentucky's bonded indebtedness by James R. Ramsey of the Kentucky Office of Investment and Debt Management.

In accord with the University of Kentucky's mandate to analyze the performance of the Kentucky economy, the Center for Business and Economic Research will prepare the *Commonwealth of Kentucky Annual Economic Report—1985* on behalf of the Governor's Financial Policy Council. Professor Don M. Soule, Department of Economics, University of Kentucky, will author this year's report, which is planned for distribution early in 1986.

* * *

The eleventh annual meeting of the Kentucky Economic Association will be held at the Executive Inn, Louisville, October 11, 1985. This year's program will include two morning sessions, each of which will include a panel discussion and formal paper sessions. Topics for the panels are "The Economic Impact of Universities" and "The Impact of Deregulation and the Economy on Banking." Papers to be presented at the other sessions are organized under the general themes: "Kentucky Economy/Agriculture," "Kentucky Forecasting," and "Kentucky Tax Topics."

The luncheon speaker at this year's meeting is Dr. Samuel Laposata, Director of Forecasting, Virginia Electric and Power Company. Dr. Laposata's subject is "Economics: Managerial and Theoretical." The annual economic outlook session will again be chaired by Professor James R. McCabe, University of Louisville. Participants are Alan F. Morel, J.J.B. Hilliard and W. L. Lyons, Inc. (Louisville); Christopher Caton, Data Resources, Inc. (Lexington, Massachusetts); and Professor Charles F. Haywood, University of Kentucky.

For further information, or to register, please contact this year's program chairman, Professor Frank Spreng, Brescia College, Owensboro, KY 42301.

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Articles submitted for publication should be sent to the Editor at the address given above. All submissions will be reviewed independently by persons recognized as knowledgeable in the specific subject discussed. However, the ultimate responsibility for content rests with the author.

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Banking in Transition: What's Behind It All?

by Donald J. Mullineaux*

Editor's Note: To mark the recent first anniversary of Kentucky's multibanking law, we have asked Professor Donald J. Mullineaux to provide our readers with an overview of the many changes taking place today in the banking industry as a whole. In the article that follows, Professor Mullineaux considers three factors: competition, deregulation, and technology and discusses each in terms of its impact on the national banking scene, and where appropriate, in terms of the current Kentucky situation.

The present pace of change in banking is hectic. Nationwide, banks are offering more products, using new technologies to deliver those products, and moving to expand their base of operations over wider geographic areas. At the same time, businesses not previously thought of as banks—such as Sears, Merrill Lynch, American Express, and Prudential/Bache—have begun to compete more directly with banks for the saver's dollar.

Bank customers like the idea of having many options for managing their money, but they're also concerned about the safety of their funds. Seventy-nine banks failed in 1984—more than in any year since the Great Depression; even more banks will close their doors in 1985. The recent failure of a savings and loan association in Cincinnati brought back vivid memories of depression days—"runs" on financial institutions as customers scrambled to withdraw their funds, followed by a government-announced temporary closing of a number of savings and loans. More than a few people consequently are beginning to wonder whether the pace of change in financial markets is so chaotic that it's yielding more bad news—an unstable financial system—than good.

Is the financial system less "safe and sound" than it used to be? Are bank failures related to the rapid pace of change in banking? Just where is banking headed? Has deregulation "gone too far"? These are critical—and difficult—questions. To get some feel for the answers, we need to look at the forces behind recent developments in banking and financial markets. Three basic factors—competition, deregulation, and technology—play a role in practically every field of business. Yet each is an especially "hot topic" in banking today. Each factor is important in its own right, but there are also interactions affecting the pace of change in banking. Competition and technological change lie behind much of the deregulation that has occurred in banking, for example, and deregulation itself has clearly enhanced competition in financial markets.

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Competition

In the 1950s and early 1960s, a bank's competition generally consisted of the bank across the street or around the block. That is, banks defined their competition strictly in terms of other *banks*, and considered only those banks in close geographic proximity as rivals. In the decade of the 1960s, banks became more aware that the so-called thrift institutions—savings and loan associations, mutual savings banks, and credit unions—were increasingly successful in attracting the savers' dollars by offering higher interest rates than banks. The U.S. Congress intervened in 1966, however, and legislated interest rate controls on deposits in thrift institutions, placing them under the umbrella of Regulation Q. Regulation Q limited the maximum amount of interest financial institutions could pay on certain kinds of deposits. This regulation effectively prevented banks and thrift institutions from competing for deposits with higher interest rates. Needless to say, many bank customers were unhappy with such an arrangement and sought alternative means of savings which yielded higher interest rates. The most popular of these became the money-market mutual fund, which offered yields close to the going rates of interest in short-term money markets. Nationally, the money-market mutual fund industry grew from roughly $43 billion in assets in 1979 to over $178 billion in 1983.

Recognizing that large chunks of money were being shifted out of banks and thrift institutions to other forms of savings, the government reacted in 1980 by phasing out Regulation Q over a gradual period of time; the last remnants of Regulation Q will be gone in April, 1986. This action opened the door to increased rate competition between banks and thrift institutions for deposits. Thrift institutions were also granted expanded powers to engage in consumer and commercial *lending* in that same 1980 legislation, and to offer interest-bearing transactions accounts (NOW accounts). These powers were enhanced in subsequent legislation passed in 1982, so that for all practical purposes, it is rather difficult today to distinguish a commercial bank from a savings and loan or a savings bank based on what services each can offer. Indeed, the balance sheets of so-called community banks (those with less than $100 million in assets) today look a great deal like the balance sheets of typical savings and loan associations. Since banks and thrift institutions have become quite closely alike in function, the degree of competition for deposit and loan customers among these institutions is very strong. Bank regulators themselves have noted this heightened competition and now take account of the presence of thrift institutions in reaching judgments about which bank mergers are permissible on competitive grounds.

Bankers could rest a little easier if increased competition was limited to forays by thrift institutions into the banking

field. But there are a host of other nonbank businesses who want to play the banking game. These include brokerage firms, insurance companies, retail firms, and even industrial concerns. Some of the more aggressive companies in providing bank-like services include Merrill Lynch, Sears and Prudential/Bache. Some banks have responded to these attempts to wean savers away from their banks by expanding their own service offerings to include discount brokerage, asset-management accounts (like Merrill Lynch's CMA account), and, where permitted, insurance services.

What motivates nonbank companies to seek business that traditionally resided with banks? Since nonbank financial service providers are not limited in geographic location, they believe they can beat the banks at their own game by exploiting what they believe is their superior distribution network and their large customer bases. Sears has over 40 million credit cards outstanding, for example. Bankers are responding by trying to find ways around the constraints on where they can locate or, in some cases, by lobbying to have such laws changed (see below).

The competitive threat to banks from nonbank firms is a serious one. Sears, for example, plans to form a network of deposit-taking firms all around the country. Sears' chairman, Edward Telling, has dubbed his proposed institutions "family banks." (Sears already owns a $5 billion savings bank in California and small banks in Delaware and South Dakota.) Sears is also about to market a universally accepted credit card to compete directly with the banks' Mastercard and Visa. In an interesting wrinkle, Sears will offer interest on positive balances on this credit-card account. By offering one-stop shopping for insurance, real estate, stocks and bonds, and payments services (along with underwear and washing machines), Sears will represent a force to be reckoned with for many banks.

Generally, competition is a good thing for consumers. Savers and borrowers are better off if they have a large number of financial service options. Competition also provides banks with strong incentives to hold down costs and enhance productivity. Nonetheless some bank regulators worry that "too much" competition can produce a sharp rise in bank failures, thus threatening the stability of the entire financial system.

Deregulation

Throughout its history, the banking business has been heavily regulated by both the federal and state governments. An elaborate mechanism constrains bank-management decisions concerning asset choice, geographic location, and the pricing of certain products. Entry into banking and merger and acquisition activity is also subject to regulation. Regulation affects *what* banks do, *where* they do it and *how* they do it.

During the 1980s some aspects of banking have been deregulated. The primary form of deregulation at the federal level concerns the phasing out of Regulation Q, described above. In 1986, banks and thrift institutions will be permitted to pay whatever rates they choose on time and savings deposits and on NOW accounts. Banks already pay unregulated rates on so-called money-market deposit accounts and Super-NOW accounts. (Banks continue to be prohibited from paying any interest on regular checking accounts, however.)

The effect of allowing banks to compete for the saver's dollar has been to raise the average cost of funds to banks. Some of this increase in the cost of funds has been passed along to borrowers, especially consumer borrowers. However, many business borrowers have options outside the banking industry for obtaining funds. As a result, banks have been less successful in passing through their higher funds costs to business borrowers. This has resulted in profit pressures on what bankers call their "net interest margins" (NIM), the difference between the average yield banks earn on loans and investments and the rate banks pay for funds. As the NIM continues to shrink, many banks have attempted to boost their profits by increasing fee income on various products such as checking accounts, safe-deposit boxes, and payments services such as wire transfers and money orders.

The deregulation of deposit interest rates represented action by the Congress and federal bank regulators that was intended to enable banks to compete more effectively for funds. But offering higher rates is only one of several means banks employ to acquire more funds. Banks can also offer more convenience by locating offices close to their customers' homes or businesses. Here again, however, banks long have been legally constrained, primarily by state laws, concerning where they can locate. Some of these regulatory barriers are also beginning to crumble.

In the 1960s and 1970s, many states eliminated or softened regulations which forced banks to operate in a narrow geographic area. In particular, there was a trend toward allowing banks to operate through a holding company organization anywhere within a state's boundaries, rather than within one county or a handful of counties. In Kentucky, the ability of bank holding companies to buy another bank(s) across county lines did not come until passage of KRS 287.900 in the 1984 session of the Kentucky General Assembly.

A bank holding company (BHC) is an umbrella organization that controls the stock of one or more banks which operate as subsidiaries of the holding company. A BHC may own nonbank subsidiaries as well, provided approval is obtained from the Federal Reserve Board. In the 1980s, the trend towards liberalized location regulations has taken a leap forward as roughly half the states, including Kentucky, have opened their borders to entry by out-of-state BHCs. Most of this geographic deregulation has involved the formation of so-called "regional compacts," in which a group of neighboring states agree to allow entry by *out-of-state* BHCs within the compact states, but preclude entry by banks in more distant states. Regional compacts, which were recently approved by the U.S. Supreme Court, already exist in the north and southeast, the far northwest, and the Rocky Mountain area. Kentucky's multibank law (KRS 287.900) permits entry by BHCs in geographically contiguous states, provided such states also permit entry by Kentucky banks. It appears likely that Kentucky soon will reach formal reciprocity agreements with Ohio, Indiana and Virginia. Negotiations are continuing with Tennessee, but new legislation may be required before reciprocity can be declared. In mid-1986, KRS 287.900 provides for opening Kentucky's borders to holding companies in *any* state that grants reciprocity to Kentucky institutions. There are two con-

straints in Kentucky's multibank law: until 1989, bank holding companies are limited to buying a maximum of three banks a year and, no bank holding company (or individual) can acquire more than 15 percent of the total deposits in all banks of Kentucky.

The changes in Kentucky's banking law and similar actions by various other states probably represent the first steps toward nationwide banking in the U.S. A bill has been passed by the U.S. House of Representatives' Banking Committee which sets a "trigger date" of 1990 to force all states that have entered regional compacts to open their boundaries to entry by bank holding companies in any state. Neither the full House nor the Senate has acted, however, and there continues to be much opposition to such legislation, especially among owners and managers of small banks. The movement towards nationwide banking appears to have gathered so much momentum, however, that the trend is unlikely to be reversed. The question is not *whether* nationwide banking will come, but *when*.

The implications of nationwide banking are straightforward. In the year 2000, there will be fewer banks in the U.S. than today, and the "average" bank will be considerably larger. No one can say for sure how many independent banks will remain, however. While there will surely be fewer than the 15,000 we have today, the numbers of banks seems likely to be measured in the thousands rather than the hundreds. There should be a place for the community bank among the giant financial supermarkets, much as we find specialty retail stores competing with large-chain department stores and discounters today.

While ending geographic restrictions appears to be the thrust of most of the deregulation action in banking at present, there is another, potentially more significant area which will come up for legislative consideration in the near future. As bankers observe other businesses "invading their turf," some bank managers have begun to lobby for new powers to engage in insurance, brokerage and underwriting. "If Sears can provide a complete financial-service package, why can't my bank?" ask many bankers.

Historically, governmental regulations have kept banking separate from insurance, real-estate development, and the securities business because of public concern that such activities would expose banks to too much risk. Prior to the Great Depression, bank operations were frequently combined with securities and insurance underwriting—at large banks, at least. Many business analysts concluded that these combinations were related to the huge number of bank failures in the 1930s, and subsequent legislation passed during the Depression placed these business areas "off limits" for banks.

Some states have already begun to ease limitations on bank entry into insurance and real estate development, and federal legislators have suggested a need for the Congress to reexamine the issue of permissible bank powers. BHCs may well gain permission eventually to deal in these areas as *brokers* (bank holding companies already engage in discount brokerage of stocks), but not without substantial opposition from real estate brokers and insurance companies. It seems doubtful that BHCs will gain *underwriting* powers for insurance or stocks and bonds, though, since most regulators and legislators regard these as excessively risky activities for BHCs. In legislation passed by the U.S. Senate in 1984 (but not considered in the House), banks were granted limited underwriting powers for municipal revenue bonds and mortgage-backed securities.

The outcome of the debate over permissible powers in banking is potentially more relevant to the issue of the stability of the banking system than geographic deregulation or the elimination of interest-rate controls. Indeed, it is probable that Regulation Q *contributed* to instability in the banking system since it forced banks to cope with wide swings in their ability to raise funds. Allowing BHCs to engage in risky underwriting activities could well expose the bank(s) in the holding company to a higher risk of failure, especially if a bank's customers tended to identify an underwriting subsidiary with the bank itself.

Which areas of banking will see more deregulation cannot be predicted with much certainty, since the process of regulation and deregulation is complex and highly politicized. What is clear is that deregulation in some areas will allow bank managers more opportunities to operate their organizations in a risky fashion. Stockholders, customers, and bank regulators all need to be alert to this.

Technology

While deregulation and competition from nonbank firms represent external factors which are *forcing* change in banking, technological developments have offered bank managers an opportunity to generate and manage change internally. While the use of computer technology helps control the costs of operations and is also a useful tool in strategic and profit planning, the most publicized role of technology in banking concerns the way banks get their products to customers.

Many bank managers are working hard to substitute electronics for paper in the delivery mechanism for banking products. The reason is straightforward: once a sufficient scale of operations is achieved, an electronically-based system is much cheaper than one based on bricks and mortar branches. In addition, a paper-based system is people intensive, and labor is a costly resource. American consumers write some 40 billion checks a year with handling costs in the range of 20-40 cents per check.

The principal technological devices that form banking's emerging electronic delivery mechanism are automatic teller machines (ATMs), point-of-sale (POS) terminals, and home banking. The computer is the heart of each. To date, the ATM has accounted for most of the technological action, but there are limited POS and home banking systems in the marketplace.

The growing importance of electronic technology in banking helps explain why some nonbank businesses want to enter the banking field. Firms such as Sears and Merrill Lynch already possess large computer networks which could be utilized to deliver traditional banking services. The trend towards increased use of technology in banking is unlikely to be *reversed*. Small banks need not fear this development, since they will

(Continued on page 8)

selected indicators OF ECONOMIC A

These tables of selected indicators of economic activity were prepared by a special-purpose program of the Kentucky Economic Information System. The data in the tables are reported figures which were obtained from a variety of state and federal agencies, as well as from private firms.

UNITED STATES DATA

	April 1985	May 1985	June 1985	Qtr. II 1985	%Chg. 85-I 85-II	%Chg. 84-II 85-II
CONSUMER PRICE INDEXES (1967=100, NOT SEASONALLY ADJUSTED)						
CONSUMER PRICE INDEX, ALL URBAN CONSUMERS, ALL ITEMS (NEW DEF)	320.10	321.30	322.30	321.23	1.20	3.71
CONSUMER PRICE INDEX, ALL URBAN CONSUMERS, FOOD AND BEVERAGES	301.60	301.00	301.40	301.33	0.19	2.45
CONSUMER PRICE INDEX, ALL URBAN CONSUMERS, HOUSING (INCL RENTAL EQUIV)	345.90	348.50	350.40	348.27	1.41	4.08
CONSUMER PRICE INDEX, ALL URBAN CONSUMERS, APPAREL AND UPKEEP	205.90	205.30	204.60	205.27	1.47	3.41
CONSUMER PRICE INDEX, ALL URBAN CONSUMERS, TRANSPORTATION	320.00	321.40	321.80	321.07	1.85	3.03
CONSUMER PRICE INDEX, ALL URBAN CONSUMERS, MEDICAL	398.00	399.50	401.70	399.73	1.51	6.08
CONSUMER PRICE INDEX, ALL URBAN CONSUMERS, ENTERTAINMENT	263.30	263.80	264.80	263.97	0.92	3.92
CONSUMER PRICE INDEX, ALL URRAN CONSUMERS, OTHER	321.80	322.30	323.00	322.37	0.87	6.23
CONSUMER PRICE INDEX, ALL URBAN CONSUMERS, SPECIAL INDEX: ENERGY	424.40	431.70	436.80	430.97	4.06	1.33
PRODUCER PRICE INDEXES (1967=100, NOT SEASONALLY ADJUSTED)						
PRODUCER PRICE INDEX, ALL COMMODITIES	309.30	309.90	309.50	309.57	0.16	-0.58
PRODUCER PRICE INDEX, ALL FINISHED GOODS	293.10	294.20	293.90	293.73	0.50	0.92
PRODUCER PRICE INDEX, FINISHED CONSUMER GOODS	291.20	292.60	292.00	291.93	0.50	0.59
PRODUCER PRICE INDEX, INTERMEDIATE MATERIALS	319.40	319.90	319.30	319.53	0.19	-0.44
PRODUCER PRICE INDEX, INTERMEDIATE MATERIALS FOR MANUFACTURING	300.70	300.60	300.40	300.57	0.07	-0.87
PRODUCER PRICE INDEX, CRUDE MATERIALS	311.30	310.00	305.50	308.93	-2.37	-8.27
PRODUCER PRICE INDEX, CRUDE FOODSTUFFS AND FEEDSTUFFS	240.50	237.00	234.00	237.17	-4.32	-10.66
PRODUCER PRICE INDEX, BITUM. COAL, INDUSTRIAL, SPOT(1967=100)	446.10	437.40	NA	NA	NA	NA
PRODUCER PRICE INDEX, BITUM. COAL, INDUSTRIAL, CONTRACT(JUNE78=100)	154.00	153.60	NA	NA	NA	NA
PRODUCER PRICE INDEX, ALL CONSTRUCTION MATERIALS	308.60	310.60	NA	NA	NA	NA
CONSUMER PRICES: ENERGY (U.S. CITY AVERAGE)						
AVG PRICE FOR UTILITY (PIPED) GAS, PER 40 THERMS	27.21	27.74	27.54	27.46	1.40	0.12
AVG PRICE FOR UTILITY (PIPED) GAS, PER 100 THERMS	62.07	64.31	63.91	63.43	2.64	-0.02
AVG PRICE FOR ELECTRICITY, PER 500 KWH	39.48	39.47	41.17	40.04	2.32	-0.45
AVG PRICE FOR FUEL OIL #2 (HOME HEATING OIL), PER GALLON	1.09	1.08	1.08	1.08	-0.46	-4.97
AVG PRICE, GASOLINE, ALL TYPES, PER GALLON	1.20	1.22	1.23	1.22	6.62	0.25
AVG PRICE, GASOLINE, LEADED REGULAR, PER GALLON	1.12	1.14	1.15	1.14	7.69	-0.87
AVG PRICE, GASOLINE, UNLEADED REGULAR, PER GALLON	1.20	1.23	1.24	1.23	6.95	-0.41
AVG PRICE, GASOLINE, LEADED PREMIUM, PER GALLON	1.34	1.36	1.37	1.36	4.28	-1.48
LABOR FORCE (SEASONALLY ADJUSTED, MILLIONS OF PERSONS)						
LABOR FORCE, TOTAL (INCL RES ARMED FORCES)	117.07	117.08	116.48	116.88	0.02	1.45
LABOR FORCE, CIVILIAN (EXCL RES ARMED FORCES)	115.37	115.37	114.78	115.18	0.02	1.46
EMPLOYMENT, RESIDENT ARMED FORCES	1.70	1.70	1.70	1.70	0.16	0.71
EMPLOYMENT, TOTAL CIVILIAN	106.94	106.96	106.37	106.76	0.03	1.69
EMPLOYMENT, AGRICULTURE	3.43	3.31	3.14	3.29	-1.44	-2.33
EMPLOYMENT, NONAGRICULTURAL	103.52	103.65	103.23	103.47	0.07	1.82
UNEMPLOYED, CIVILIAN, TOTAL	8.43	8.41	8.41	8.42	-0.11	-1.31
UNEMPLOYMENT RATE, TOTAL LABOR FORCE	7.20	7.20	7.20	7.20	-0.12	-2.73
UNEMPLOYMENT RATE, CIVILIAN LABOR FORCE	7.30	7.29	7.33	7.31	-0.12	-2.74
OTHER SELECTED NATIONAL INDICATORS:						
U.S. GROSS NATIONAL PRODUCT (B $) (% CHG, ANNUAL RATE)	NA	NA	NA	3855.10	4.70	5.77
U.S. REAL GROSS NATIONAL PRODUCT (B 72$) (% CHG, ANNUAL RATE)	NA	NA	NA	1671.60	2.00	2.00
PERSONAL INCOME, TOTAL, SEASONALLY ADJUSTED (B $)	3186.10	3164.30	3176.10	3175.50	1.01	6.40
COMPOSITE INDEX OF 12 LEADING INDICATORS (1967=100)	166.70	166.90	168.50	167.37	0.10	-0.18
INDEX OF INDUSTRIAL PRODUCTION, SEASONALLY ADJUSTED (1977=100)	124.30	124.40	124.60	124.43	0.54	2.47
AVERAGE PRIME RATE CHARGED BY BANKS ON SHORT-TERM BUSINESS LOANS	10.50	10.31	9.78	10.20	-3.23	-17.15
INTEREST RATE, YIELD ON 3-MONTH TREASURY BILLS	8.00	7.56	7.01	7.52	-8.07	-23.57
PRIVATE HOUSING UNITS AUTH, 17000 PERMIT-ISSUING PLACES (SADJ THOU)	1704.00	1778.00	1713.00	1785.00	3.90	188.88
TOTAL INSTALLMENT CREDIT OUTSTANDING AT END OF MONTH (B $)	479.93	488.67	497.36	487.38	5.47	16.92

CTIVITY

KENTUCKY DATA

	Apr. 1985	May 1985	June 1985	Qtr. II 1985	% Chg. 85-I 85-II	%Chg. 84-II 85-II
LABOR FORCE (NOT SEASONALLY ADJUSTED, THOUSANDS)						
LABOR FORCE, TOTAL CIVILIAN	1684.40	1883.10	1714.90	1894.13	0.21	-1.81
EMPLOYMENT, TOTAL, BY PLACE OF RESIDENCE	1554.70	1554.40	1572.90	1560.67	1.94	-0.30
EMPLOYMENT, AGRICULTURAL	58.10	63.40	78.70	66.40	37.88	-2.18
EMPLOYMENT, TOTAL NON-AGRICULTURAL	1498.60	1491.00	1498.20	1495.27	0.78	-0.22
UNEMPLOYMENT RATE	7.70	7.80	8.30	7.93	-15.84	-15.09
EMPLOYMENT, TOTAL NON-AGRICULTURAL WAGE AND SALARY	1240.40	1244.00	1251.40	1245.27	1.88	2.86
EMPLOYMENT, BITUMINOUS COAL & LIGNITE MINING (SIC 12)	39.80	39.80	39.90	39.83	0.59	1.27
EMPLOYMENT, CONTRACT CONSTRUCTION	51.90	53.20	58.10	54.40	15.08	8.92
EMPLOYMENT, TOTAL MANUFACTURING	256.80	255.90	257.10	256.60	-0.38	-0.87
EMPLOYMENT, MANUFACTURING, DURABLE	142.30	142.40	142.80	142.50	-0.12	-0.60
EMPLOYMENT, MANUFACTURING, NON-DURABLE	114.50	113.50	114.30	114.10	-0.70	-0.75
EMPLOYMENT, TRANSPORTATION, COMMUNICATIONS & PUBLIC UTILITIES	67.40	68.10	69.00	68.17	2.05	5.03
EMPLOYMENT, WHOLESALE & RETAIL TRADE	292.50	295.80	297.40	295.23	2.20	6.17
EMPLOYMENT, FINANCE, INSURANCE & REAL ESTATE (SIC 60-67)	57.10	57.30	57.90	57.43	2.19	4.74
EMPLOYMENT, SERVICES (SIC 70-80)	240.70	239.50	241.90	240.70	-4.32	2.81
EMPLOYMENT, CIVILIAN GOVERNMENT	228.80	228.80	228.30	227.97	0.60	1.06
EMPLOYMENT, STATE & LOCAL GOVERNMENT	188.00	187.50	184.80	186.77	0.13	0.72
HOURS AND EARNINGS OF PRODUCTION WORKERS IN MANUFACTURING						
AVG WEEKLY HOURS, PROD WORKERS, TOTAL MANUFACTURING	38.50	39.00	39.10	38.87	1.22	-0.88
AVG WEEKLY HOURS, PROD WORKERS, MANUFACTURING DURABLES	39.10	39.70	39.70	39.50	0.77	-1.90
AVG WEEKLY HOURS, PROD WORKERS, NON-DURABLE MANUFACTURING	37.70	38.20	38.40	38.10	1.87	0.79
AVG HOURLY EARN, PROD WORKERS, TOTAL MANUFACTURING	9.56	9.54	9.55	9.55	1.06	2.91
AVG HOURLY EARN, PROD WORKERS, MANUFACTURING DURABLES	10.27	10.11	10.20	10.19	0.99	2.24
AVG HOURLY EARN, PROD WORKERS, NON-DURABLE MANUFACTURING	8.66	8.81	8.74	8.74	1.59	4.01
AVG WEEKLY EARN, PROD WORKERS, TOTAL MANUFACTURING	368.08	372.06	373.41	371.18	2.52	2.21
AVG WEEKLY EARN, PROD WORKERS, MANUFACTURING DURABLES	401.56	401.37	404.94	402.62	1.77	0.29
AVG WEEKLY EARN, PROD WORKERS, NON-DURABLE MANUFACTURING	326.48	336.54	335.62	332.88	3.51	4.84
MINING (MILLIONS OF TONS, MILLIONS OF TAX DOLLARS)						
BITUMINOUS COAL & LIGNITE, PHYSICAL OUTPUT, EASTERN KY. TOTAL	10.08	10.21	9.67	29.96	18.67	-13.27
BITUMINOUS COAL & LIGNITE, PHYSICAL OUTPUT, WESTERN KY. TOTAL	3.06	3.10	3.02	9.18	3.67	-10.99
AVG HOURLY EARN, PROD WORKERS, BITUMINOUS COAL & LIGNITE MINING	14.52	14.93	15.33	14.93	-0.73	7.95
AVG WEEKLY EARN, PROD WORKERS, BITUMINOUS COAL & LIGNITE MINING	556.12	589.74	618.27	587.38	3.09	17.20
AVG WEEKLY HOURS, PROD WORKERS, BITUMINOUS COAL & LIGNITE MINING	38.30	39.50	40.20	39.32	3.96	12.70
TAX RECEIPTS, COAL SEVERANCE, CONSOLIDATED, TOTAL	18.12	17.87	17.66	53.65	*	2.98
HOUSING (MILLIONS OF $, NO. OF PRIVATE RESID. UNITS--NOT SEAS ADJ)						
VALUE OF CONSTRUCTION CONTRACTS, RESIDENTIAL & NON-RES	211.20	189.70	239.10	640.00	58.42	8.33
HOUSING UNITS, PRIVATE STRUCTURES, PERMIT AUTHORIZED, 1 UNIT	685.00	841.00	NA	NA	NA	NA
VALUATION, HOUSING UNITS, PRIVATE STRUCTURES, PERMIT AUTH, 1 UNIT	39.32	37.40	NA	NA	NA	NA
HOUSING UNITS, PRIVATE STRUCTURES, PERMIT AUTHORIZED, TOTAL	1442.00	838.00	NA	NA	NA	NA
VALUATION, HOUSING UNITS, PRIVATE STRUCTURES, PERMIT AUTH, TOTAL	55.28	41.91	NA	NA	NA	NA
NET LOANS MADE & ACQUIRED BY KY. SAVINGS & LOAN ASSOCIATIONS	48.31	45.73	60.92	154.96	245.79	-53.08
RETAIL SALES (MIL $, 000 CARS)						
TAX RECEIPTS, GENERAL FUND, SALES AND GROSS RECEIPTS	71.43	90.05	81.11	242.59	*	10.01
NEW PASSENGER CAR REGISTRATIONS, TOTAL, NOT SEAS. ADJ.	11.16	11.38	10.50	33.04	24.85	3.17
SELECTED STATE GOVERNMENT RECEIPTS (MIL $)						
TAX AND NONTAX RECEIPTS, GENERAL FUND, TOTAL	233.93	159.41	247.39	640.73	*	3.08
TAX RECEIPTS, GENERAL FUND, SALES & USE TAXES, TOTAL	65.66	72.17	70.02	207.85	*	10.21
TAX RECEIPTS, GENERAL FUND, INCOME TAX, INDIVIDUAL	85.63	28.28	67.25	181.16	*	-2.52
TAX RECEIPTS, GENERAL FUND, INCOME TAX, CORPORATION	31.45	4.10	58.50	94.05	*	8.90
TAX RECEIPTS, STATE ROAD FUND, STATE SHARE	44.71	42.10	36.10	122.90	*	6.34
TAX RECEIPTS, STATE ROAD FUND, MOTOR FUELS TAXES, NORMAL	16.93	16.50	16.32	49.75	*	0.47
TAX RECEIPTS, STATE ROAD FUND, MOTOR VEHICLE USAGE TAX	13.54	13.64	16.08	43.26	*	13.55

PRIVATE SOURCES FOR THE ABOVE DATA INCLUDE:
F. W. DODGE DIVISION (MCGRAW-HILL INFORMATION SYSTEMS COMPANY), VALUE OF CONSTRUCTION CONTRACTS;
R. L. POLK & COMPANY, NEW CAR REGISTRATIONS (NA FOR OCT. '83)

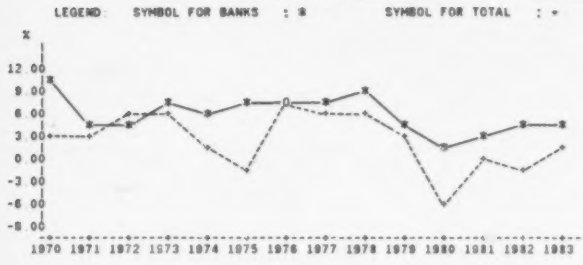
NOTE: THE DATA ON PERMIT-AUTHORIZED CONSTRUCTION COME FROM THE BUREAU OF THE CENSUS, U.S. DEPARTMENT OF COMMERCE AND REPRESENT THE KENTUCKY PORTION OF THE NATIONAL SURVEY OF 17,000 PERMIT-ISSUING PLACES.

* = QUARTER TO QUARTER COMPARISONS NOT MEANINGFUL DUE TO SEASONAL VARIATION

(Continued from page 5)

FIGURE 1

PERCENT CHANGE IN KENTUCKY REAL (72$) EARNINGS IN BANKING & IN TOTAL NONAGRICULTURAL EARNINGS, 1970-1983



be able to offer similar services through "network" arrangements with other banks or even nonbank firms. The ability of small banks to link up their ATMs to large regional networks is one example of networking. Technology consequently offers all bankers the opportunity to cope with the rapid pace of change, but customers will be the ultimate judge of the appropriate role for technology in banking's delivery system.

What Does It All Mean?

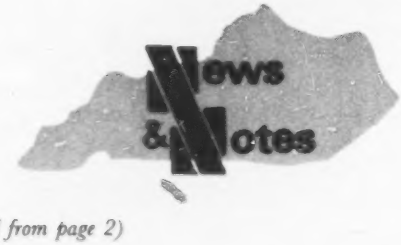
Banking is not what it used to be—but that statement has held throughout most of the history of banking. Indeed, change may be the only constant in banking. While change is unavoidable, it typically brings some bad along with the good, especially if the change is chaotic and hence wildly unpredictable. Some bank regulators have expressed concerns about the risks associated with the current pace of change in banking. In fact, amidst all the deregulation of the 1980s, there has occurred a new form of regulation which is designed to provide more public control over risk taking in banking. Banks are now required by federal regulatory agencies (the Federal Reserve, the Comptroller of the Currency, and the Federal Deposit Insurance Corporation) to maintain minimum ratios of capital to assets. Since capital provides a buffer against losses, the regulators hope this reduces the prospects of large numbers of bank failures. The regulators are also attempting to raise the price of risk taking to bank managers. A number of large fines have been assessed recently on managers and directors of failing banks, for example. And the regulators have proposed raising the fees for deposit insurance for those banks which operate in a more risky fashion.

In the judgment of most analysts, the sharp rise in bank failures in the 1980s resulted primarily from the two national recessions of 1980 and 1982/83, and the rapid pace of disinflation which these economic downturns produced. Sectoral problems in energy, manufacturing, and agriculture, which reflected international developments, also have played a key role. There is little evidence to date that deregulation and enhanced competition are behind the problem of increased bank failures.

Despite the national economic recovery and the apparent stability of inflation, many banks—large and small—remain exposed to substantial risks. The international debt problem, while much less publicized today than several years ago, has hardly disappeared. And banks with large exposures in the energy and agriculture sectors are quite vulnerable, especially if a recession were to develop.

Not all the news is bad, however. Many banks have rebuilt their profitability, despite the volatile economy and the rapid pace of change in banking. And in Kentucky, earnings of persons in the banking industry, even when controlled for inflation, grew steadily over the years since 1970, in contrast to the downturn in earnings experienced more generally in Kentucky in some years. (See Figure 1.) Banking has been a growth industry.

The apparent lesson is straightforward: banks which plan for an uncertain future, identify emerging trends and customer needs, and provide banking services in the most efficient fashion, will grow and prosper. Those which cannot will not be here in the year 2000.



(Continued from page 2)

This is the first mailing of *Review & Perspective* using our new computerized mailing list. Completion of the transfer to this format has been a significant undertaking and the product of the combined efforts of Center for Business and Economic Research staff members, Roy A. Sigafus and Elsie M. Youmans. Please contact Ms. Youmans for any additions, changes, or corrections.

* * *

Recent *Working Papers* of the College of Business and Economics include:

"Valuing Changes in Health Risks: A Comparison of Alternative Measures," by Mark C. Berger, Glenn C. Blomquist, Don Kenkel, and George S. Tolley;

"Interpretation of Trends in U.S. and Soviet Defense Budgets," by Richard E. Gift;

"The Joint Production of Confidence: Commercial-Bank Clearinghouses and the Theory of Hierarchy," by Donald J. Mullineaux and Gary Gorton; and

"The Influence of Environmental Policy on International Trade in Differentiated Products Among Industrialized Countries," by Werner Waldner.

Copies of these papers are available upon request. Please contact Dr. Patricia Y. Smith, Center for Business and Economic Research, 301 Mathews Bldg., University of Kentucky, Lexington, Kentucky 40506-0047.

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(Continued from page 1)

justments in the first part of 1985, at an annual rate of 3.5 percent for the first seven months, also reflect the stagnating economy and price pressures from foreign products.

The outlook for the remainder of 1985 remains mixed. The continuing growth in the national composite index of leading economic indicators suggests positive growth for the national economy for the remainder of 1985, while consumer expenditures growth in July of 0.4 percent reflects a wait-and-see attitude on the part of the U.S. consumer. The University of Michigan's study of consumer attitudes for the second quarter of 1985 also reflected a cautious view of the future by consumers. Given all of these things, the current consensus view for the remainder of 1985, of overall growth in the range of from 2 to between 2 and 3 percent, seems most realistic. Congressional and Administrative economic policy action and related Fed responses are the key variables which will determine the growth levels at the upper or lower points on the forecast range.

The economic picture in Kentueky appears quite consistent with the national picture. As noted in the Spring 1985 issue of *Review & Perspective*, Kentucky reverted to a pattern of more closely tracking the national economy during the latter part of 1984. Since the end of 1984, (fourth quarter, 1984 to first quarter, 1985), total personal income grew 1.0 percent in Kentucky while increasing 1.5 percent in the United States. (See the table below for a display of disaggregated quarterly personal income for Kentucky for the period from the first quarter, 1984 through the first quarter, 1985.) The unadjusted and preliminary Kentucky civilian unemployment rates for the first two quarters of 1985 of 9.4 percent and 7.9 percent, respectively, remain above the comparable U.S. rates, although improvement in the Kentucky situation can be noted. Employment data for Kentucky, especially data for manufacturing and construction employment, still suggest a sluggish recovery in the Commonwealth from the major national recessions of 1980 and 1982-83. In both of those industries, as well as in mining, overall employment levels remain well below the peaks reached in the late 1970s.

In addition, as shown in the table of disaggregated personal income data (below), current dollar earnings (seasonally adjusted at an annual rate) in Kentucky's mining; construction; nondurable goods manufacturing; transportation, communications, and public utilities; and wholesale trade industries declined during the fourth quarter of 1984. Earnings in both durable and nondurable goods manufacturing declined in the first quarter of 1985 as well, according to preliminary estimates, but estimates for the other major industries in Kentucky suggest growth in the first quarter. Tax data for fiscal year 1985 (FY 85) reflect continued growth; the individual and corporate income tax receipts grew by 9.3 and 6.3 percent respectively, while the sales tax produced 9.1 percent more revenue in FY 85 than in FY 84.

In summary, the U.S. economy has performed less well in 1985 than predicted by the Reagan Administration. A "growth recession" may characterize the national economy. Businesses and consumers are experiencing a sense of general economic stability, but this seems tempered by concerns about the economy's long-term health and the effect of international competition on jobs. Rapid economic expansion has ended. It is unlikely that there will be significant improvement in the Kentucky economy until there is greater prosperity at the national level.

K E N T U C K Y E C O N O M I C I N F O R M A T I O N S Y S T E M

STANDARDIZED TABLE 201
KENTUCKY QUARTERLY ECONOMIC DATABANK
KENTUCKY PERSONAL INCOME: SUMMARY, BY QUARTERS

SERIES		QU 1,1984	QU 2,1984	QU 3,1984	QU 4,1984	QU 1,1985
1	INCOME, TOTAL KENTUCKY PERSONAL,BY PLACE OF RESIDENCE, SEAS ADJ,ANN RATE	36930.00	38237.00	39437.00	39573.00	39950.00
2	INCOME, REAL KENTUCKY PERSONAL, IN 1972 DOLLARS	16940.36	17443.88	17804.51	17761.67	17787.18
10	INCOME, NONFARM PERSONAL, TOTAL (Y$-YAG$)	36176.00	37310.00	37765.00	38153.00	38825.00
11	INCOME, FARM PERSONAL, TOTAL	754.00	927.00	1671.00	1420.00	1125.00
5	INCOME, WAGE & SALARY TOTAL, BY PLACE OF WORK	20268.00	20925.00	21028.00	21172.00	21533.00
6	INCOME, OTHER LABOR, BY PLACE OF WORK	2491.00	2601.00	2652.00	2670.00	2705.00
7	INCOME, PROPRIETORS, BY PLACE OF WORK (RESIDENCE)	3111.00	3364.00	4087.00	3893.00	3713.00
8	INCOME, PROPRIETORS, FARM	617.00	789.00	1532.00	1277.00	981.00
9	INCOME, PROPRIETORS, NONFARM	2495.00	2575.00	2555.00	2616.00	2732.00
12	EARNINGS, TOTAL, NONFARM, TOTAL	25117.00	25963.00	26095.00	26316.00	26827.00
13	EARNINGS, TOTAL, NONFARM, PRIVATE	20705.00	21446.00	21620.00	21718.00	22164.00
14	EARNINGS, TOTAL, AG. SERV., FORESTRY, FISHERIES, & OTHER	118.00	118.00	124.00	129.00	136.00
15	EARNINGS, TOTAL, MINING (SIC 10-14)	1564.00	1690.00	1798.00	1654.00	1690.00
16	EARNINGS, TOTAL, CONTRACT CONSTRUCTION (SIC 15-17)	1338.00	1394.00	1336.00	1317.00	1449.00
17	EARNINGS, TOTAL, MANUFACTURING, TOTAL	6338.00	6581.00	6529.00	6659.00	6473.00
18	EARNINGS, TOTAL, MANUFACTURING, NONDURABLE GOODS	2631.00	2669.00	2675.00	2670.00	2641.00
19	EARNINGS, TOTAL, MANUFACTURING, DURABLE GOODS	3707.00	3913.00	3854.00	3989.00	3833.00
20	EARNINGS, TOTAL, TRANS., COMM., & PUB UTIL (SIC40-49)	1949.00	2022.00	2102.00	2062.00	2135.00
21	EARNINGS, TOTAL, WHOLESALE & RETAIL TRADE (SIC 50-59)	3829.00	3940.00	3980.00	3991.00	4234.00
22	EARNINGS, TOTAL, WHOLESALE TRADE (SIC 50-51)	1333.00	1366.00	1412.00	1387.00	1519.00
23	EARNINGS, TOTAL, RETAIL TRADE (SIC 52-59)	2496.00	2574.00	2568.00	2604.00	2715.00
24	EARNINGS, TOTAL, FIN., INS., & REAL ESTATE (SIC 60-67)	1210.00	1244.00	1258.00	1295.00	1314.00
25	EARNINGS, TOTAL, SERVICES (SIC 70-89)	4357.00	4457.00	4492.00	4610.00	4735.00
26	EARNINGS, TOTAL, GOVERNMENT, TOTAL	4412.00	4517.00	4475.00	4598.00	4662.00
27	EARNINGS, TOTAL, GOVERNMENT, FEDERAL CIVILIAN	922.00	935.00	948.00	948.00	976.00
28	EARNINGS, TOTAL, GOVERNMENT, FEDERAL MILITARY	767.00	774.00	775.00	786.00	816.00
29	EARNINGS, TOTAL, GOVERNMENT, STATE & LOCAL	2723.00	2808.00	2752.00	2864.00	2870.00
30	EARNINGS, TOTAL, GOVERNMENT, TOTAL CIVILIAN	3645.00	3743.00	3700.00	3812.00	3846.00
31	INCOME, TOTAL EARNINGS BY PLACE OF WORK (YAG$ + YLPNAG$)	25871.00	26890.00	27767.00	27735.00	27952.00
32	PERSONAL CONTRIBUTIONS TO SOCIAL INSURANCE, BY PLACE OF WORK	1523.00	1566.00	1577.00	1575.00	1706.00
33	INCOME, NET EARNINGS BY PLACE OF WORK	24348.00	25324.00	26190.00	26160.00	26246.00
34	ADJUSTMENT FOR RESIDENCE, KENTUCKY PERSONAL INCOME	222.00	208.00	210.00	226.00	217.00
35	INCOME, NET EARNINGS, BY PLACE OF RESIDENCE	24570.00	25531.00	26400.00	26386.00	26462.00
36	INCOME, PROPERTY: DIVIDENDS, INTEREST, RENTS & ROYALTIES, TOTAL	6217.00	6508.00	6815.00	6923.00	6947.00
37	INCOME, TRANSFER PAYMENTS, TOTAL	6144.00	6198.00	6221.00	6264.00	6541.00
38	INCOME, TRANSFER PAYMENTS, STATE U.I. BENEFITS	226.00	213.00	180.00	198.00	230.00
39	INCOME, TRANSFER PAYMENTS, EXCLUDING STATE U.I. BENEFITS	5917.00	5985.00	6041.00	6066.00	6311.00

UNITS: MILLIONS OF CURRENT DOLLARS
SOURCE: BUREAU OF ECON ANALYSIS, US DEPT COMMERCE; KY ECON INFO SYS
NOTE: ALL SERIES SEASONALLY ADJUSTED AT ANNUAL RATE.

B.E.A. Regional Fact Sheet: BEARFACTS

The Regional Economic Measurement Division of the Bureau of Economic Analysis (BEA), U.S. Department of Commerce, has recently issued a new product from its regional data base. Dubbed BEARFACTs (BEA Regional Fact Sheets), this product consists of narratives drawn from the estimates presented in the nine-volume set, *Local Area Personal Income, 1978-83*. That series describes area Personal Income using current estimates, growth rates, and a breakdown of the sources of Personal Income for each area.

BEARFACTs takes information from the database and prepares a computerized and capsulized analysis of the trends reflected in the data reported in those publications. Each BEARFACT contains four sections, each treating one facet of Personal Income: Per Capita Personal Income, Total Personal Income, the components of Personal Income, and Earnings by major industry. The Per Capita and Total Personal Income sections include current estimates, growth rates, and comparisons of the area's income to other local areas and to the nation. The other sections list the area's most important sources of income, what percent of income they generate, and how fast they are growing.

BEARFACTS is available for counties, metropolitan areas, and states in two standard time frames, each ending with the most current year's estimate. One describes change over the two most current years (1982-83), and the other analyzes a ten year period (1973-83). BEA will also prepare BEARFACTs in a nonstandard-year format, in which the beginning and ending years can be specified by a requestor.

The Center for Business and Economic Research (CBER), University of Kentucky, has received a copy of both the 1973-83 and 1982-83 BEARFACTs for Kentucky, its metropolitan areas, and for each of its 120 counties. These are available for reference review at the CBER Library (302 Mathews Building, University of Kentucky), or a full set may be ordered from the Center. To cover the cost of duplication and handling, there will be a charge of $10.00 for each full set (i.e., a copy of both the 1973-83 and 1982-83 set costs $20). BEARFACTs for other states or for nonstandard years are available, upon request, from the Regional Economic Measurement Division (REMD), Bureau of Economic Analysis, U.S. Department of Commerce (Washington, D.C. 20230). There is a charge for BEARFACTs obtained from REMD.

In order for our readers to have a sense of the narratives incorporated in BEARFACTs, we reprint below the BEARFACTs for the state of Kentucky for 1982-83 and for the Louisville metropolitan area for 1973-83.

Kentucky: 1982-83

Kentucky is one of the 51 states in the United States. (The District of Columbia is included for ranking purposes.) Its 1983 population of 3,714,300 ranked 23rd in the nation.

Per Capita Personal Income. In 1983, Kentucky had a Per Capita Personal Income (PCPI) of $9,396. This PCPI ranked 45th in the United States and was 80 percent of the national average ($11,687). The 1983 PCPI reflected an increase of 3.3 percent from 1982. The 1982-83 change was less than the national average (5.2 percent).

Total Personal Income. In 1983, Kentucky had a Total Personal Income (TPI) of $34,898,897,000. This TPI ranked 26th in the United States and accounted for 1.3 percent of the national total. The 1983 TPI reflected an increase of 3.9 percent from 1982. The 1982-83 change was less than the national average (6.2 percent).

Components of Total Personal Income. Total Personal Income (TPI) includes the Earnings (Wages and Salaries, Other Labor Income, and Proprietors' Income), Dividends, Interest, and Rent; and Transfer Payments received by the residents of Kentucky. In 1983, Earnings were 65.9 percent of TPI; Dividends, Interest, and Rent were 16.8 percent; and Transfer Payments were 17.4 percent. From 1982 to 1983, Earnings increased 2.9 percent; Dividends, Interest, and Rent increased 3.7 percent; and Transfer Payments increased 8.2 percent.

Earnings by Industry. Earnings of persons employed in Kentucky increased from $23,611,435,000 in 1982 to $24,218,922,000 in 1983, an increase of 2.6 percent. The largest industries in 1983 were Services, which accounted for 17.0 percent of Earnings; Durable Goods Manufacturing, 13.7 percent; State and Local Government, 10.8 percent; and Non-Durable Goods Manufacturing, 10.4 percent. Of the industries that accounted for at least 5 percent of Earnings in 1983, the slowest growing from 1982 to 1983 was Mining (5.9 percent of Earnings in 1983), which declined 19.5 percent; the fastest was Services, which increased 13.0 percent.

Louisville, KY-IN: 1973-83

Louisville is one of the 313 metropolitan areas in the United States. Its 1983 population of 955,800 ranked 48th in the nation.

Per Capita Personal Income. In 1983, Louisville had a Per Capita Personal Income (PCPI) of $11,507. This PCPI ranked 128th in the United States and was 98 percent of the national average ($11,687). In 1973, Louisville's PCPI of $4,954 ranked 119th in the United States. The average annual growth rate of PCPI over the past 10 years was 8.8 percent, equal to the national average (8.8 percent).

Total Personal Income. In 1983, Louisville had a Total Personal Income (TPI) of $10,998,576,000. This TPI ranked 50th in the United States. In 1973, Louisville's TPI of $4,638,111,000 ranked 45th in the United States. The average annual growth rate of TPI over the past 10 years was 9.0 percent, less than the national average (10.0 percent).

Components of Total Personal Income. Total Personal Income (TPI) includes the Earnings (Wages and Salaries, Other Labor Income, and Proprietors' Income); Dividends, Interest, and Rent; and Transfer Payments received by the residents of Louisville [the metropolitan Louisville area]. In 1983, Earnings were 68.1 percent of TPI (compared with 78.2 percent in 1973); Dividends, Interest, and Rent were 17.5 percent (compared with 11.8 percent in 1973); and Transfer Payments were 14.4 percent (compared with 10.0 percent in 1973). From 1973 to 1983, Earnings increased on average 7.5 percent each year; Dividends, Interest, and Rent increased on average 13.3 percent; and Transfer Payments increased on average 13.1 percent.

Earnings by Industry. Earnings of persons employed in Louisville [the Louisville metropolitan area] increased from $3,926,235,000 in 1973 to $8,201,015,000 in 1983, an average annual growth rate of 7.6 percent. The largest industries in 1983 were Services, which accounted for 19.5 percent of Earnings; Durable Goods Manufacturing, 16.4 percent; Non-Durable Goods Manufacturing, 12.5 percent; and Retail Trade, 9.9 percent. In 1973, the largest industries were Durable Goods Manufacturing, with 23.0 percent of Earnings; Non-Durable Goods Manufacturing, 13.3 percent; Services, 13.3 percent; and Retail Trade, 10.3 percent. Of the industries that accounted for at least 5 percent of Earnings in 1983, the slowest growing from 1973 to 1983 was Durable Goods Manufacturing, which increased at an average annual rate of 4.1 percent; the fastest was Services, which increased at an average annual rate of 11.8 percent.

KENTUCKY COUNTY-LEVEL PER CAPITA PERSONAL INCOME, 1982-83

The following table gives the current dollar values for Kentucky county-level per capita personal income in 1982 and 1983, and shows the percentage change over these two years. Comparable information is shown on the map on page 16. Note that current dollar (i.e., nominal) per capita personal income declined in 54 counties in 1983; if these data were controlled at a constant dollar level, declines would also be shown for the 45 additional counties that did not grow at least 3.7 percent, the rate of national inflation as measured by the implicit price deflator for personal consumption expenditures.

Overall, the Kentucky economy did not fare well during 1983, posting an increase in per capita income of only 3.3 percent, less than the national rate of inflation, compared with a growth of 5.2 percent for the nation. In both Kentucky and the U.S., earnings in agriculture and mining declined substantially in 1983, and declines in these industries are reflected in almost all of the Kentucky counties where an overall decline in per capita personal income was reported. In addition however, counties with a decline in overall per capita personal income in 1983 generally experienced a decline in earnings in at least one other of Kentucky's industries, particularly construction (which grew only 1.2 percent on the state-level in 1983), wholesale trade (which had a 2.6 percent increase on the state level in 1983), and/or manufacturing (which experienced an overall growth rate of 5.6 percent in 1983).

In addition to accounting for the declines on the basis of earnings by industry, a quick review of the metropolitan Kentucky counties (those 19 Kentucky counties identified by the U.S. Office of Management and Budget as belonging to Metropolitan Statistical Areas) reveals that only 3 (Carter, Greenup, and Henderson) were among the counties with income declines. In other words, most of the income decline occurred in the nonmetropolitan areas of the state. In no area was population growth large enough to cause substantial per capita income decline. Furthermore, many of the counties which declined are counties which have traditionally ranked among the lowest in their level of per capita personal income. For example, 14 of the 20 lowest ranked counties (the exceptions are Russell, Knox, Wayne, Lee, Leslie, and Clinton Counties), had declines in nominal per capita personal income in 1983.

Finally, in 1983 only 10 Kentucky counties grew at a rate faster than the U.S. growth rate (5.2 percent), but of these 10, only 4 (Bourbon, Fayette, Jefferson, and Woodford) were at a level that was higher than the national average per capita personal income ($11,687). Franklin County, while not growing at a rate to match the national growth rate, nonetheless also had a level of per capita personal income that was above the national average.

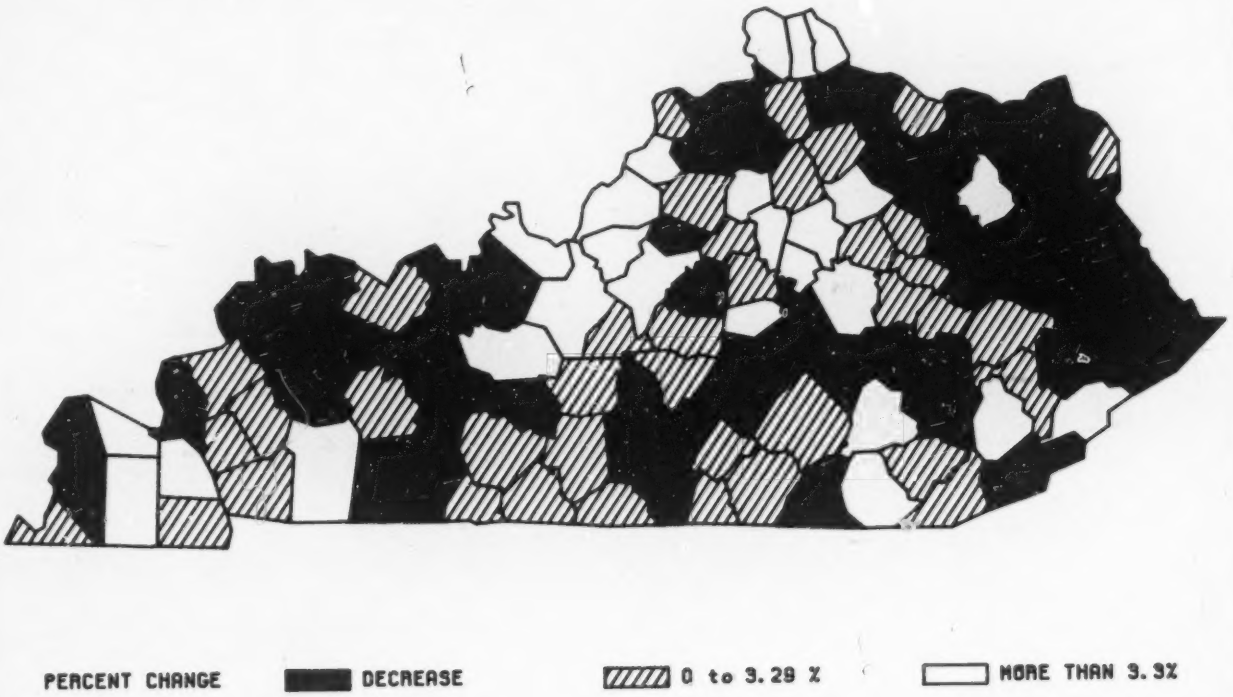
The source for the county-level per capita personal income estimates is the Bureau of Economic Analysis (BEA), U.S. Department of Commerce. Estimates for 1983 and revised estimates for 1978-82 were released by BEA in May 1985. These data, together with the full range of county-level personal income estimates, including disaggregated transfer payments data and detailed data on farm earnings and expenditures, are available for access through the Kentucky Economic Information System (KEIS).

	1982	1983	PERCENT CHANGE 1982-83
ADAIR	$8209.00	$8284.00	-0.87
ALLEN	7790.00	7837.00	0.73
ANDERSON	9208.00	9498.00	3.15
BALLARD	9591.00	9347.00	-2.54
BARREN	7933.00	8055.00	1.54
BATH	7091.00	6658.00	-6.11
BELL	7418.00	7461.00	0.61
BOONE	10147.00	10703.00	5.48
BOURBON	12752.00	13824.00	8.41
BOYD	10492.00	10639.00	1.40
BOYLE	9089.00	9424.00	3.57
BRACKEN	8155.00	7755.00	-4.90
BREATHITT	8506.00	8512.00	0.09
BRECKENRIDGE	8818.00	8672.00	-2.11
BULLITT	7651.00	8088.00	5.71
BUTLER	6315.00	6079.00	-3.74
CALDWELL	8881.00	8897.00	0.18
CALLOWAY	8259.00	8520.00	3.16
CAMPBELL	8501.00	10129.00	8.61
CARLISLE	7892.00	7456.00	-5.52
CARROLL	9543.00	9199.00	-3.60
CARTER	6338.00	6239.00	-1.56
CASEY	5554.00	5439.00	-2.07
CHRISTIAN	8418.00	8810.00	4.66
CLARK	9970.00	10278.00	3.09
CLAY	8454.00	8425.00	-0.45
CLINTON	4913.00	4977.00	1.30
CRITTENDEN	8224.00	8269.00	0.55
CUMBERLAND	8520.00	8500.00	-0.31
DAVIESS	10389.00	10703.00	3.02
EDMONSON	5664.00	5357.00	-5.42
ELLIOTT	5156.00	4763.00	-7.62
ESTILL	6695.00	6891.00	2.93
FAYETTE	12316.00	13377.00	8.61
FLEMING	6492.00	6164.00	-5.05
FLOYD	6891.00	6738.00	-2.22
FRANKLIN	11466.00	11956.00	4.27
FULTON	9314.00	9409.00	1.02
GALLATIN	7439.00	7438.00	-0.01
GARRARD	8034.00	7734.00	-3.73
GRANT	8230.00	8248.00	0.22
GRAVES	8716.00	9020.00	3.49
GRAYSON	6798.00	7047.00	3.66
GREEN	7238.00	6891.00	-4.79
GREENUP	9226.00	9131.00	-1.03
HANCOCK	10029.00	9926.00	-1.03
HARDIN	8160.00	8630.00	5.76
HARLAN	7486.00	7275.00	-2.82
HARRISON	3924.00	9015.00	1.02
HART	6299.00	6412.00	1.79
HENDERSON	10412.00	10348.00	-0.61
HENRY	8706.00	8482.00	-2.57
HICKMAN	7803.00	7002.00	-10.27
HOPKINS	10972.00	10855.00	-1.07
JACKSON	4826.00	4779.00	-0.97
JEFFERSON	11450.00	12238.00	6.88
JESSAMINE	8699.00	9027.00	3.77
JOHNSON	7772.00	7378.00	-5.07
KENTON	9861.00	10495.00	6.43
KNOTT	6218.00	6126.00	-1.48
KNOX	5638.00	5817.00	3.17
LARUE	7718.00	7854.00	1.76
LAUREL	6997.00	7239.00	3.46
LAWRENCE	6914.00	6784.00	-1.88
LEE	5451.00	5547.00	1.76
LESLIE	5294.00	5498.00	3.85
LETCHER	6423.00	6694.00	4.22
LEWIS	5544.00	5362.00	-3.28
LINCOLN	6306.00	6147.00	-2.52
LIVINGSTON	8668.00	8639.00	-0.31
LOGAN	8371.00	7864.00	-9.18
LYON	7388.00	7442.00	1.00
MCCRACKEN	10722.00	11264.00	5.08
MCCREARY	4723.00	4537.00	-3.94
MCLEAN	9024.00	8882.00	-1.48
MADISON	7480.00	7843.00	4.65
MAGOFFIN	5875.00	5634.00	-4.10
MARION	8157.00	8199.00	0.68
MARSHALL	9695.00	8970.00	4.24
MARTIN	8108.00	7802.00	-3.75
MASON	9013.00	9260.00	2.74
MEADE	6942.00	7299.00	5.14
MENIFEE	4800.00	4710.00	-1.88
MERCER	8378.00	8504.00	1.50
METCALFE	6009.00	5688.00	-5.34
MONROE	6152.00	6227.00	1.22
MONTGOMERY	7860.00	7972.00	1.42
MORGAN	5615.00	5449.00	-2.96
MUHLENBERG	9669.00	9897.00	2.36
NELSON	8255.00	8543.00	3.49
NICHOLAS	7522.00	7191.00	-4.40
OHIO	8050.00	7932.00	-1.47
OLDHAM	10349.00	10905.00	5.37
OWEN	7008.00	6869.00	-4.84
OWSLEY	4337.00	4121.00	-4.98
PENDLETON	7771.00	7758.00	-1.48
PERRY	7279.00	7382.00	1.42
PIKE	8225.00	7850.00	-4.56
POWELL	6034.00	6221.00	3.10
PULASKI	7485.00	7654.00	2.26
ROBERTSON	7190.00	6360.00	-11.54
ROCKCASTLE	5185.00	5145.00	-0.77
ROWAN	6623.00	7015.00	5.92
RUSSELL	5972.00	6018.00	0.77
SCOTT	9728.00	9944.00	2.22
SHELBY	9658.00	9809.00	1.56
SIMPSON	8982.00	9131.00	1.66
SPENCER	7713.00	7447.00	-3.45
TAYLOR	7937.00	8127.00	2.39
TODD	6890.00	6184.00	-10.25
TRIGG	8816.00	8904.00	1.00
TRIMBLE	7875.00	8026.00	1.92
UNION	10297.00	9564.00	-7.12
WARREN	8007.00	8090.00	1.04
WASHINGTON	7287.00	7097.00	-2.34
WAYNE	5548.00	5808.00	1.08
WEBSTER	10283.00	9783.00	-4.88
WHITLEY	7529.00	7872.00	4.58
WOLFE	5209.00	5022.00	-3.59
WOODFORD	13517.00	14317.00	5.92
PURCHASE ADD NO.1	9280.88	9812.51	3.57
PENNYRILE ADD NO.2	8957.74	9249.27	3.25
GREEN RIVER ADD NO.3	10059.62	10039.71	-0.20
BARREN RIVER ADD NO.4	7751.28	7550.13	-2.60
LINCOLN TRAIL ADD NO.5	7537.28	7847.52	4.12
KIPDA(KY COUNTIES) ADD NO.6	11025.81	11753.55	6.60
NORTHERN KENTUCKY ADD NO.7	9582.20	10043.16	4.81
BUFFALO TRACE ADD NO.8	7382.78	7151.67	-2.87
GATEWAY ADD NO.9	6876.20	6785.98	1.84
FIVCO ADD NO.10	8927.49	8717.07	-1.25
BIG SANDY ADD NO.11	7705.71	7314.26	-5.08
KENTUCKY RIVER ADD NO.12	6443.86	6372.59	-1.11
CUMBERLAND VALLY ADD NO.13	6812.01	6845.05	0.49
LAKE CUMBERLAND ADD NO.14	6509.40	6522.20	0.20
BLUEGRASS ADD NO.15	10304.81	10942.70	6.19
KENTUCKY STATE TOTALS	9097.00	9396.00	3.29

SOURCE: BUREAU OF ECON ANALYSIS, US DEPT COMMERCE; KY ECON INFO SYS

Kentucky Per Capita Personal Income

County-level, 1982 - 1983



Source: Bureau of Economic Analysis, U.S. Department of Commerce, through the Kentucky Economic Information System. Map produced by Roy A. Sigafus using the graphics capabilities of SAS (Statistical Analysis System).

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